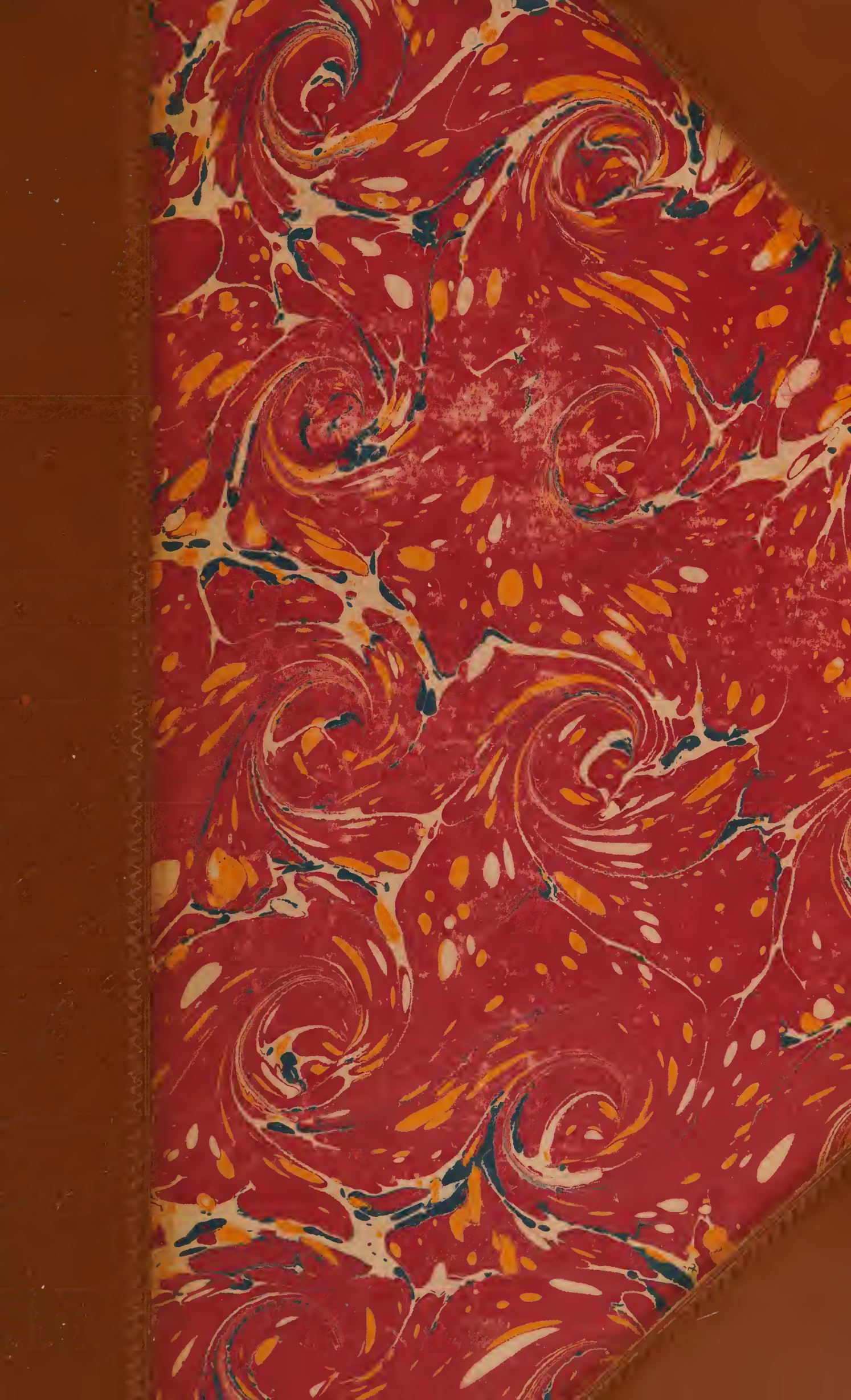

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THE

EDINBURGH

JOURNAL OF MEDICAL SCIENCE.

THE

EDINBURGH

JOURNAL OF MEDICAL SCIENCE,

EXHIBITING A COMPENDIOUS VIEW OF THE

PROGRESSIVE IMPROVEMENTS AND DISCOVERIES

OCCURRING IN

PRACTICAL MEDICINE, PRACTICAL SURGERY, MIDWIFERY, ANATOMY (HUMAN, COMPARATIVE, MORBID), PHYSIOLOGY (HUMAN, COMPARATIVE), PATHOLOGY (HUMAN, COMPARATIVE), CHEMISTRY, PHARMACY, BOTANY, MATERIA MEDICA, AND MEDICAL JURISPRUDENCE.

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THE

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MEDICAL SCIENCE.

PART I.

ORIGINAL PAPERS,

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I. PRACTICE OF MEDICINE.

On a peculiarly soft State of the Structure of the Lungs. By CHARLES HASTINGS, M. D. Physician to the Infirmary, Worcester.

IN the recent investigations which have been so ably followed up relative to the diseases affecting the structure of the lungs, it does not appear to me that the attention of authors has been much called to a peculiar SOFTENING of that texture which frequently occurs, and in consequence of which, without any tubercular degeneration, or any of the usual effects which arise from inflammatory action, such changes take place in its composition, that it becomes altogether unfit for the usual purposes of healthy lung. Sometimes, in consequence of this state, profuse hemorrhages occur; sometimes large ulcerous cavities are formed, not of a tuberculous nature, and not surrounded by any hardening of the adjacent lung, as in hepatization; and sometimes the cellular structure passes into a pulpy state, and makes its way into the bronchia, from whence it is expectorated, without

any ulcerated cavity being formed. This remarkable softening of the pulmonary substance, has presented itself to me under very different states of the constitution: occasionally it has occurred in connection with fever; occasionally in connection with a gradual failure of the powers of the body, and slow emaciation; but in most instances the symptoms indicative of much mischief in the structure of the lungs have not accompanied this affection. Its tendency, however, in all cases, is to destroy life by gradually unfitting the lungs for their office; and it therefore does not appear an unworthy employment, to endeavour to trace the phenomena, and to propose the most probable means of preventing the progress, of this affection, when it takes place.

It may not be out of place here to premise a short account of the ultimate texture of the lungs in health, in order that no mistake may be committed in calling that disease which is not so, and also to prevent our readers from being misled by any description we may give of the examples brought forward.

It is universally known, that, in the natural state, the substance of the lungs is almost entirely spongy, being made up of an infinite number of membranous cells, and of different sorts of vessels spread amongst them, in innumerable ramifications. The vessels which principally compose the substance of the lungs are the air-vessels and blood-vessels; of these the air vessels make the chief part. These, together with the nerves, are all united together by a very delicate cellular or filamentous tissue.

We may trace, in a healthy lung, the extent and disposition of the air tubes, and the several branches into which it is divided, by cutting them open, and tracing as far as the scalpel can follow them. This surface is formed by a mucous membrane, smooth, very delicate, dense, and impermeable to air. At the windpipe this forms a single canal, which divides as it descends into numerous branches, which are distributed through the lungs in such a manner, that, after almost numberless divisions, they terminate in blind or unopen extremities, which are often, when dilated, seen as small vesicles on the pleural surface of the healthy lungs; the capacity of the lower branches always diminishing in size as they increase in number. This spongy mass has been mistaken by some anatomists for cellular texture, but the fallacy of this opinion is demonstrated by a very simple experiment. If one of the bronchial tubes of the lobule of a lung be accurately inclosed by a ligature, and the whole lung be inflated from the windpipe, the ligature being drawn tight in the lower part of the lung below the ligature, the bronchial tubes will retain the air most steadily, while the upper will collapse as the air gradually escapes. When an experiment of a like nature is made on a cellular, filamentous, or submucous texture of the lungs, by making a small incision into the pulmonic pleura be-

tween two lobules, and blowing air into it, a very different result ensues, for the air will be slowly dissipated, and will spread gradually under it through their interstices, and it cannot, when the inflation is suspended, be readily squeezed out, but resembles an emphysema.

Hence it has been concluded, that the pulmonic breath-tube, or windpipe, is divided into branches, which decrease in diameter, and increase in number, in a fixed and uniform ratio, till they terminate in extremities which are shut and rounded; that it has no communication with the pulmonic cellular tissue, nor does it assume its nature; but retains its peculiar texture to the uttermost terminations, by which being shut it resembles air cells or air vesicles, which are now become membranous, in consequence of the delicacy of their structure no longer admitting of their being cartilaginous.

We may therefore conclude, that what are termed breath-cells or vesicles, are merely the ultimate terminations of the bronchial tubes mutually intersecting *; that they are formed chiefly by a thin membrane, which is believed to be mucous; and that the outer or attached surface of this pulmonic membrane is connected to the other organic tissues of which the lung consists, by a delicate modification of that substance which has been called *cellular membrane.*

It is hoped that the above short description of the more intimate structure, which is taken from the accounts of the most recent investigations of this subject, will prepare the reader for the contemplation of a change in this structure, which is not alluded to by authors, and which will be more graphically set forth by the following cases.

Case I.—*Fever; Death on the 31st day; Lungs softened; Death by Suffocation.*

Thomas K, æt. 24, was not seen till the 7th day. He had received the disease by visiting a friend ill of fever. The stage of collapse was come on when I first visited him, and he was covered with dark petechiæ. I employed a moderately stimulating plan, with cool air and free purging, from which he appeared to derive much benefit, and he seemed to be recovering slowly; but, on the 27th day, his breath became much affected, and he had a severe attack of great tightness of the chest. The pulse was small and quick. He had leeches applied to the chest, and it was freely blistered; but the symptoms were not relieved by these means. He died on the 31st day of the disease.

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* See Haller.

Dissection.—The lungs did not collapse on removing the sternum. They were exceedingly soft in their texture, and very much resembled the spleen when in a very soft state. The pleura was so soft that it gave way by a slight touch of the finger; and in many places there was a dark bloody fluid between this membrane and the pulmonary tissue. On cutting through the trachea before its bifurcation, we found it full of a bloody serous fluid, and its membrane was, like the pleura, in an unusually soft state. The ramifications of the bronchia were found full of the same kind of fluid as the trachea, and the mucous membrane lining them was very much broken down. In the extreme breath cells the membranous appearance was lost, and we only discovered a soft pulpy matter.

The heart was flaccid in its texture, and its surface was covered with fibrine.

The abdominal viscera were also in a flaccid state, but there was no particular disease there.

The brain was soft. The longitudinal sinus was empty.

The blood was thin, and was not coagulated.

CASE II.—*Fever; Death on the 27th day; Lungs softened; Thick Chocolate-coloured Fluid in the Air Cells.*

G. J., æt. 50, was received into the Worcester Infirmary on the 3d of August 1822, having been ill, as was said, of fever three weeks. When admitted he was furiously delirious, with red eyes. He had also severe cough, and difficulty of breathing; and tenderness of the abdomen on pressure.

He was bled from the arm to eight ounces. His head was shaved, and cold applications used. He took a brisk purgative, and a blister was applied to the back of the neck.

By these means the cerebral symptoms were much abated, and in a few days he became quite rational. The cough also and difficulty of breathing were relieved; but there was considerable pain and tenderness over the abdomen, and the bowels were inactive. The abdominal symptoms became more urgent; but neither the cough, difficulty of breathing, nor delirium returned. He died on the 9th of August.

Dissection.—Head.—There was nothing unnatural in the appearance of the dura mater. The arachnoid membrane was opake and thickened. There was a quantity of serous fluid contained between the dura mater and pia mater. The bloodvessels of the pia mater were not very much loaded. The bloodvessels in the substance of the brain appeared more numerous and larger than usual. There was about an ounce and a half of fluid in the ventricle.

Thorax.—There was no adhesion between the pleuræ. The lungs did not collapse when the sternum was raised: they felt specifically heavy.

There was no fluid found in the trachea, but its mucous membrane was of a dirty yellow colour. On pursuing the bronchial ramifications, the mucous membrane had every where the same dirty yellow appearance. There was not a great deal of fluid in the bronchia, but the air cells seemed loaded with a fluid not unlike chocolate grounds. The whole of the tissue of the lungs seemed congested with blood. This state was much more conspicuous in the superior lobes of the lungs, and the lungs were much gorged with a fluid of the consistence and colour of chocolate grounds. A considerable portion of the superior lobe of each lung was of a dark brown colour, and its texture was so soft as to be readily broken down with the finger. Its structure was so altered, and so soft, that no remains of the cellular or vesicular texture of the lungs could be traced; neither was it either spongy or elastic.

In neither the middle nor inferior lobes could be discovered this extreme softness; but there was general congestion of the bloodvessels, and two or three points of purulent matter were discovered.

Abdomen.—The peritoneum was inflamed, though not in any considerable degree; and in other respects the abdomen was healthy.

Case III.—*Softened Lungs; Scirrhous Liver; Chronick Catarrh.*

In November 1821, C. W., æt. 45, was received into the Infirmary under my care, having for two or three years been in bad health. He had been a soldier, and was much addicted to the use of spiritous liquors. He was habitually costive, and, by exposure to cold, was often afflicted with severe cough and copious expectoration. At the time of his first admission there was considerable dyspnea; he coughed very much, and expectorated a thick yellow matter, which occasionally seemed deeply tinged with bile. The countenance was very sallow, and there was much tenderness in the epigastric region. Eight ounces of blood were taken from the epigastrium by the cupping glass, and a blister was applied. He took two grains of calomel and eight of cathartic extract every night, and twenty drops of tincture of colchicum three times a-day. In about a fortnight he was convalescent, and was discharged from the Infirmary. Some months afterwards he again returned to the Infirmary, and was relieved by the same means. Early in September 1822 he had a severe return of the disease, but was not seen by

any medical person. According to the account of those about him he coughed very much, and expectorated a blackish matter, which was very offensive. His stools also they represented as very disordered.

Dissection.—Pleura healthy; the lungs were of a very dark colour, and scarcely at all crepitous; the mucous membrane of the bronchia was inflamed, pulpy, and thickened; the bronchial cells were filled with a thick matter of the consistence of pus, but nearly of the colour of chocolate. The more minute air cells seemed also filled with the same kind of matter; the sub-mucous tissue was a good deal loaded; the texture of the lungs was of a dark colour, and very soft. On tracing the air cells to their minutest ramifications, they seemed almost in a pulpy state, and all distinction between the proper cellular and filamentous tissue was destroyed. The heart was healthy.

Abdomen.—The liver was very hard, and of a light colour; the spleen was enlarged; the intestines were not diseased.

CASE IV.—*Inflamed Bowels proving fatal; softened Lungs.*

J. C. æt. 40, a leather dresser by trade, of a thin, spare habit, and delicate health, was taken ill soon after drinking some strong ale, with violent pain in the bowels, and frequent calls to stool. To these symptoms, violent vomiting soon succeeded; and although medical aid was promptly called, and the most decided antiphlogistic measures were almost immediately employed, the vomiting and pain continued, and he died two days thereafter, without any symptom of pulmonary affection.

Dissection sixteen hours after death.

Abdomen.—The peritoneal investment of the abdominal viscera, without any exception, was free from disease.

The stomach was not in a healthy state. Its contents were of a dark colour like coffee grounds; near its pyloric orifice, the mucous membrane was redder than natural, and some blood was extravasated.

The duodenum was healthy; the upper part of the jejunum was also healthy, but was distended with the same dark coloured fluid as was contained in the stomach. About twenty inches from the commencement of the jejunum, the bowel became suddenly much diseased. It was of a very dark colour; its minute vessels were much injected; and it had lost its firmness of texture, and readily tore when touched. This appearance of the intestine continued for the space of nine inches, and then disappeared as suddenly as it had commenced; the portion of intestine

immediately beyond being free from inflammation, and of a firm texture: the intestine beyond the diseased part was nevertheless much contracted, so that a little finger would scarcely pass into it; the contraction appeared of a spasmodic nature.

Beyond the mortified part of the jejunum, the whole intestinal canal was perfectly healthy, and contained scarcely any fecal matter, although the diseased portion of the jejunum, and the intestinal canal above it, were, as before noticed, very much distended.

Thorax.—The pleura covering the lungs was not very healthy. It was thickened, and was most diseased where it covered the superior lobe of each lung; at two points there were some hard tubercles; at another part, the membrane had become almost cartilaginous.

The bronchial membrane did not appear thickened, but it was rather redder than natural; the lungs felt heavier than usual, and were not elastic or crepitous. When cut into, the structure appeared of a much darker colour than natural, and the vessels of the submucous tissue were congested, and a serous fluid was effused into it; the structure of the organ was very soft, and it was readily broken into a pulp with the finger. In the more minute ramifications, the vesicular and filamentous tissues could in no degree be distinguished in the superior lobe of the right lung, the texture was so broken down.

The heart was healthy.

Case V.—*Softened Lungs. Hemoptysis. Cachexia.*

On the 19th of August 1825, I was consulted for a young lady who had been for about two months in a dubious state, from a very slight cough, with trifling expectoration in the morning, which had once or twice been tinged with blood. On the morning of my visit, she had expectorated some blood, unmixed with pus or mucus, and of a scarlet colour. Her parents were on this account under great alarm; for they had previously lost three children in consumption. There was nothing, however, in the general appearance of the young lady to have induced any alarm in an ordinary spectator. She was rather full of flesh, and considered that she had rather gained than lost in that particular during the two months previous to my visit. To an experienced eye, nevertheless, she had not a healthy look; for her countenance was rather bordering on the cadaverous, and her eyes were dull. The hands, too, felt very clammy, and there was a listlessness in her manner. The pulse was not more than 76°. The tongue was clean, and the bowels were regular. I could not trace any feverish action during the

twenty-four hours. The breathing was quite free, and a full inspiration produced no uneasiness. The catamenia were regular. In short, she declared, that, excepting the slight barking cough which attacked her in the morning, when she first began to dress, she was in perfect health. She discovered, however, great alarm at the appearance of the blood when she coughed; and declared her conviction that she had the same disease of which her brothers and sister had died.

I examined, at this time, the chest particularly, and found that percussion gave a natural sound on each side of the chest. With the stethoscope the respiratory murmur was heard on the right side of the chest, and pectoriloquism was not discovered in any improper situation. On the left side of the chest, the respiratory murmur was also heard, and perfect pectoriloquism was discovered between the second and third, and third and fourth ribs.

I concluded, that there was a cavity in the superior lobe of the left lung; but as the other portions gave no indications of disorganization, I did not suppose that, if the case did terminate unfavourably, that event would speedily occur. I determined, as I could not hope to cure this disruption of the pulmonic texture, to adopt a palliative treatment.

Some blood was taken from between the shoulders by the cupping-glasses, and I directed a mixture of infusion of roses and tincture of digitalis to be taken every four hours. I also put her upon a mild unstimulating diet, and recommended quietude.

In a few days the spitting of blood disappeared, and this amiable young lady described herself in perfect health again, excepting that she had a slight morning cough, with a trifling expectoration. She walked about without any hurry of respiration, and seemed rather anxious not to be considered an invalid. It was, however, but too evident, that the dread destroyer was silently in operation; for another examination with the stethoscope established still more strongly my conviction of the existence of a cavity in the superior lobe of the left lung. Her eyes looked very languid and inexpressive; and her hands had a deadly clammy feel.

I could see no hope from the adoption of any of the heroic remedies, and made up my mind to treat the case on the principle of supporting the general powers of the body. I recommended sponging the surface of the body with salt and water, daily horse exercise, and an abstinence from mental stimuli; and at the same time desired that the mixture of infusion of roses and tincture of digitalis might be continued.

She went on with very little appearance of illness, and without losing any flesh, till the 15th of September, on the morning of

which she coughed up about two tea-spoonfuls of dark coloured blood, accompanied with a small quantity of pus-like matter. The pulse was 94°. The breathing was not at all hurried, and there was not any heat of skin. The catamenia had not appeared, although a week more than the usual period had passed.

I now added two grains of alum to each dose of the former mixture; and directed five grains of the pill of aloes and myrrh to be taken every night.

The hemorrhage did not proceed farther; and on the 17th the catamenia returned. She had still a cough, though she would scarcely now again allow that she was ill. There was no feverishness, and the pulse was again 80°. The bowels continued regular, quiet was particularly enjoined, and great caution in exertions of the voice; but she was advised to ride out on a donkey every day. She continued the rose mixture; and the body was still spunged every day with vinegar and water.

This plan was continued till the 25th of September, when symptoms of slight hectic fever shewed themselves; the face was occasionally flushed. Up to this period, there had, however, been no apparent wasting, but a cough, principally in the morning, accompanied with an expectoration of an ill looking purulent matter, in small quantity. The bowels were regular, and general strength was not diminished. I now gave her ten grains of myrrh, combined with an ounce of infusion of roses, three times a-day; and the diet and regimen were not altered.

On the 28th, a sudden exasperation of the symptoms took place, the breathing became hurried, the cough much more troublesome, and a considerable quantity of scarlet coloured blood was expectorated. She also complained very much of pain between the shoulders.

She was kept cool, and in the horizontal posture, and was not allowed to speak. She took only cold drinks, and a mixture of alum, sulphuric acid, and tincture of digitalis, every four hours. Two ounces of blood were also taken from between the shoulders by the cupping glass.

The bleeding, however, continued till the next day. The breathing was still short, the cheeks were flushed, pulse 120°, beat regular.

She now took one grain of superacetate of lead, and one quarter of a grain of opium every two hours, and drank nothing but vinegar and water. These means for a time allayed the severity of the hemorrhage; but in a day or two it again recurred, with increased violence. The pulse became almost of countless frequency. The face was ultimately flushed and deadly pale. The tongue was much loaded. Subsultus tendinum soon came on, delirium and complete exhaustion. She died on the morning of the 8th of October.

Dissection.—No considerable emaciation had taken place. The abdominal viscera were perfectly healthy.

On elevating the sternum, nothing worthy of remark presented itself. On removing the lungs, they were found slightly adherent on the right side, and much more so on the left; on both sides the adhesion was high up, and in the direction of the axillæ. The internal surface of the trachea was free from any appearance of purulent secretion. The bronchia contained a small quantity of sero-sanguineous fluid. On tracing the ramifications in the right lobes, the only appearances were a rather suffused state of the bloodvessels in some parts, the lungs of a soft structure, and the air vessels throughout pervious. The general appearances of the left lobes resembled those of the right; but on the outer and upper surface of the superior lobe appeared a cavity large enough to admit the half of a middle sized orange, which had been prevented from opening into the cavity of the chest, by the adhesion of the surface of the lung to the costal pleura; but it communicated freely with the bronchial tube. Pus was searched for; but the slightest trace of it could not any where be found; nor was there the smallest degree of hardness in the sides of this ulcer, indicative of the process of adhesive inflammation having been set up. On the contrary, the appearance was that of a simple ulcerative absorption rapidly advancing.

Observations.—This strikes me as a case deserving peculiar attention, as connected with the pathology of consumptive diseases. Here was a young woman belonging to a family, of which three members had previously fallen victims to diseases of the chest. This in itself, may be said, is sufficient condemnation of a case, if, under such unfavourable auspices, pulmonary symptoms at all shew themselves. These, however, at first shewed themselves in so mild a form, that but for the accompanying unfavourable history of similar affections in the family, very little attention would have been paid to them. The stethoscope at once informed us, it is true, that there was a cavity in the superior lobe of the left lung; but even this did not much forward the knowledge of the case; for here we were instructed by that instrument, that the disease was confined to a comparatively small portion of the lungs, the respiratory murmur in other parts being natural. It might, therefore, not unfairly be concluded, that as the disease was confined, and as the constitutional symptoms were very mild, there was some chance of an eventual recovery; at any rate, that the disease would not pursue a rapid course. This, I say, would have been the fair conclusion, if one had rested on the information derived from the stethoscope; and I make this observation the more freely, because I am anxious that we should not be drawn aside

from the closest attention to morbid signs, by making the stethoscope our sole guide. Laennec calls pectoriloquism a pathognomic sign of the true consumption; but that it is not so, the above case sufficiently evinces. If the pectoriloquism had been in this case the true sign of tubercular consumption, confined as the diseased action was to a part of the upper lobe of one lung, recovery might have been possible; and the fatal event, at any rate, would have been some time deferred; but the cavity being occasioned by the general softened state of the lungs, predisposing to ulcerative absorption, and the ulcerative action being progressive, and not followed by any adhesive process, a number of bloodvessels were opened, which accounted for the occurrence of the repeated and at last fatal hemorrhage. I was myself impressed from the commencement of this affection, that there was something very peculiar in the diseased action it exhibited; and I abstained from bleeding, under a conviction that the disease was by no means of an inflammatory nature; and the result of the case proved this conjecture to be right, as I never saw lungs more free from the appearance of inflammation.

Case VI.—*Softening of both Lungs; Right Lung nearly destroyed.*

In June 1821, J. A. aged 8 years, was received into the Worcester Infirmary, having a calculus in his bladder; but, in addition, he had long been afflicted with severe cough, and copious expectoration, and was much emaciated. He was also subject to evening paroxysms of fever, and night sweats. The appearance of the expectoration was decidedly purulent; and every three or four days he brought up nearly a tea cupful of matter, of a dark colour, at a time. The pulse was very quick. As he suffered much from irritation of the bladder, it was deemed expedient to remove the calculus from the bladder, and the operation was accordingly performed, from which he very narrowly escaped, for he was very near sinking from the first shock occasioned to the system by it. He, however, eventually recovered from the effects of the operation, and his cough, and other symptoms of pulmonary disease, soon afterwards became mitigated. It was at this time I first carefully examined the state of the chest. I found that, by percussion, I could scarcely produce any sound on the left side of the chest; whilst on the right side, the sound appeared rather more hollow than usual. The cylinder did not discover any respiratory murmur on the anterior part of the left side of the chest; but on the whole of the opposite side, the respiratory murmur was puerile to the highest degree. It was evident, therefore, that the left lung was rendered useless,

for it was not permeable to air; and, consequently, the right was serving the office of both lungs.

Notwithstanding this state of the left lung, the boy's health improved, and he was in a few weeks sent out of the Infirmary for the benefit of country air. Soon after his return home, he evidently gained flesh, but the cough did not subside, and every third or fourth day he expectorated nearly two ounces of thick, fetid, dark coloured pus. I again examined the chest with the cylinder, and similar results to those before stated were afforded.

Throughout the whole of the autumn, and the early part of the winter, he continued much in the same state, having constantly a severe cough, and occasionally ejecting considerable quantities of fetid purulent matter.

In the early part of January 1823, J. A. took a severe cold, which greatly aggravated all the symptoms. The cough ever after continued more severe, and was attended with more considerable quantities of the fetid purulent expectoration, and a very rapid loss of flesh followed.

I had not, however, an opportunity of again seeing this patient before his death, which happened in the middle of the month of May; but I understood, that, for some time previous to that occurrence, the sputa became still more fetid, and of a dark brown colour.

Dissection.—The body was in every part much emaciated. When the sternum, together with the cartilages of the ribs, were removed, we perceived that the right lung was larger than usual, and, pushing the mediastinum before it, had passed to the left side, in some degree. The left lung did not appear larger than one-third of its natural size. When an incision was made into it, nearly the whole of its parenchymatous structure appeared to be destroyed. What remained, was principally thickened bronchia, and pleura. The bronchial tubes were enlarged, and filled with a dark coloured, pultaceous fluid, not unlike the soft matter sometimes found in cases of fungus hæmatodes. The mucous membrane itself was of a dark colour, its bloodvessels congested, and its texture much thickened. There was a cavity of the size of the interior of a pullet's egg, which was nearly filled with the same kind of pultaceous matter as that described in the bronchial cells. There were no tubercles.

The pleura was very much thickened, and adhered to the pericardium, which was also thickened.

The right lung was larger than usual. Its bronchial membrane was pulpy, thickened, and its bloodvessels much congested. Several of the bronchial cells were filled with the same

kind of dark coloured pultaceous matter as that found in the left lung.

The lung was in colour much darker than ordinary, being nearly as dark as chocolate. When the lung was pressed, there was not discovered the usual crepitus, neither did the organ at all collapse.

The superior lobe of this lung was most diseased: when an incision was made into it, the appearance was very striking. There was no remnant of air cells. The whole of the substance of this part seemed to have passed into a soft and almost pulpy state. There was no cavity, and no appearance of tubercles.

The middle lobe was also much diseased. The structure was much softer than natural. The peculiar spongy nature of the lung was not discerned, and the air cells contained a dark coloured pultaceous matter. There were also several small portions of this lobe as soft, and nearly of the colour, of the cineritious parts of the brain.

In the inferior lobe, we found some portions which had nearly a healthy appearance, but of a loose texture. The mucous membrane was here thickened, and inflamed; and many of the cells contained dark coloured matter, similar to that in the other lobes of the lung. Some parts of this lobe likewise bore a resemblance to the cineritious parts of the brain.

The heart was healthy, but the pericardium adhered to it, and was thickened. The pericardium also adhered to the left lung.

The abdominal viscera were free from disease.

Observations.—I would first observe, that, in this case, the cylinder, and percussion, afforded very important indications relative to the state of the left lung. The want of sound on percussion, and likewise the absence of the respiratory murmur over the whole of the anterior part of the left side of the chest, as well as the contraction of the ribs, shewed the impermeability of that lung to air, and, consequently, that the process of respiration was carried on by the right lung alone. This fact was confirmed by the appearance on dissection, when the right lung was found unusually large, and the left was almost entirely wasted.

In what manner was this effect produced? This question was not answered by the stethoscope. For, before death, it was conjectured that the uselessness of the left lung, and contraction of the chest, might have arisen, in the way it often does, as the result of empyema; the effused fluid having been absorbed, and the ribs having fallen in on that side. This was the conjecture before death, but it proved erroneous; for in the pleura, excepting in the neighbourhood of the heart, none of the results of inflamma-

tory action were discovered. No false membrane had been formed.

How, then, was this contraction of the chest, and wasting of the left lung produced? This will, I think, be best explained by considering the condition of the right lung at death.

We find there evidence of a remarkable change having taken place in the structure of this organ, of a like nature, but different in degree, in the three lobes.

The superior lobe was quite soft, and, in many parts, was converted into pultaceous matter; and the contents of the bronchia shewed that this pultaceous matter had passed into them, and parts of it had probably been expectorated.

No part of the middle lobe of this lung was free from disease; it was in all parts very soft, but had not become pultaceous.

Some parts of the inferior lobe were nearly in a healthy state, though it was pretty generally very soft.

There is, then, little doubt, it may be presumed, if the life of this patient could have been prolonged, that the whole of the superior lobe of the right lung would have been ejected through the mouth, after having become softened; and little more than the bronchia and pleura would have then remained. In this extraordinary manner the whole of the parenchymatous structure of the left lung appears to have been destroyed at a former period.

We may then conclude, that the three lobes of the right lung exemplified the softening of the organ in its commencement, progress, and perfection; whereas the left lung shewed the effect of this softening, viz. complete destruction.

Concluding Remarks.

In offering a few concluding remarks on the above cases, it may not be improper to observe, that I attach some degree of importance to them, as they seem to me calculated to awaken the profession to the contemplation of a morbid change in the structure of the lungs, which is not, as far as my reading has carried me, dwelt upon by authors who have elucidated the subject.

It does not seem that "the soft pulpy tubercle of the lungs" described by Baillie, can be of the same nature as the general softening of their structure, such as was found to exist in the observations here recorded. The disease described by Baillie, "consists of a soft tumour, formed of a light brown smooth substance. In cutting through several of these tumours, Dr B. never found any of them in a state of suppuration. They were

commonly as large as a gooseberry, and were chiefly placed upon the surface of the lungs."

Neither can we class them with either the scirrhous or hematoid tubercle of the lungs; for these bodies are in all cases either imbedded in the parenchymatous substance of the lungs, or are found immediately under the pulmonary pleura; but in our observations, the entire substance of the lungs had become soft. The colour of the lungs, in the above cases, at once forbids us from referring to them as instances of the melanoid tubercle of the lungs; for the remarkable dark colour of the latter, nearly of the hue of common ink, forms its peculiar feature.

I have also searched the writings of Bayle and Laennec, and other eminent French pathologists, but am not aware that they have characterized any morbid changes of the exact nature of that which forms the subject of this communication.

Some of the readers of this communication, may perhaps be inclined to refer to the above as exemplifications of the "*ramollissement rouge*" and the "*ramollissement gris*" of Andral; which states, as that author shews, frequently arise in pneumonia of the acute kind; but my cases differ from those of the French author, in my never having detected any purulent matter; whereas Andral remarks, that, when incisions are made in a lung affected in the manner he describes, a viscid, opake and purulent matter, having a faint nauseous smell, flows in greater or less quantity; and the whole bears a strong resemblance to a spunge dipped in pus.

It seems almost needless to say, that this morbid change differs from pulmonary apoplexy. The latter affection is always partial, and never occupies any considerable portion of the lung; its most common extent being from three to four cubic inches. It is always very exactly circumscribed; and at the point where the affection ceases, the lesion is as characteristic as towards its centre, and the surrounding pulmonary tissue is healthy and crepitating. In the examples of softening of the lungs here brought forward, no part of the tissue of these organs was in a healthy state.

I am not prepared to explain the manner in which this change was produced in the structure of the lungs; neither have I any peculiar remedy to propose, which may be used as a means of arresting the progress of this destructive softening of so important an organ.

Nevertheless I would briefly crave attention to some circumstances in connection with it, which are not so difficult to be understood, and which may perhaps throw a few rays of light on the dimness which surrounds the inquiry.

In all the instances, then, in which this softening occurred, it may be well to bear in mind, that the body, generally, was re-

markable for a considerable looseness of texture and relaxation of fibre. This general state of relaxation and looseness of fibre arose under various circumstances. In cases 1 and 2 it was the result of prolonged fever; in Case 3 it appeared to be the effect of long continued catarrhal affection; in Case 4, sedentary occupation; and in Cases 5 and 6 it would seem that there was a naturally lax constitution of the animal fibre.

Now, to apply these observations to the matter in hand, viz. the explanation of the softening of the parenchymatous structure of the lungs, it must be evident, on the slightest consideration, that there is no organ in the body, from the delicacy of the structure of its fibres, as well as from the extraordinary pressure those fibres have to sustain, both from the quantity of blood, which is at all times contained in the bloodvessels of the organ, as also from the velocity with which it passes through them, so likely to suffer from relaxation, and deficient cohesion of its texture, as the lungs. For, in such a state, can it be for a moment doubted, that congestion of the bloodvessels will take place from much slighter causes than when the fibres are of a more vigorous and healthful nature? It must not be forgotten, likewise, that, in this state of relaxation of the texture, and congestion of the bloodvessels of the lungs, the vital principle will be less energetic than in the natural state, when the fibre is more susceptible of irritation. In such a state, consequently, the organs will be more under the influence of chemical action. Neither can we for a moment hesitate in believing, that, in such circumstances, chemical changes may sooner or later take place in the structure of the parts affected, if the relaxation of fibre, and congestion of bloodvessels, long continue. These chemical changes may be of such a nature as materially to lessen the cohesion of the parts, and may in the end proceed to the entire destruction of the fabric of the lungs, as appears to have happened in Case 6; or it may exist in a much less degree, as in Cases 1 and 2, when the parenchymatous structure of the lungs is found much softer than natural, and readily broken down with very slight pressure.

If this view of the subject be correct, it goes, in some degree, to explain the frequency of the occurrence of pulmonary consumption, in states of great debility.

May not we also take advantage of such cases as the above, and by them enforce the necessity of treating certain varieties of pulmonary consumption by a strictly tonic plan? And may not this plan, so much reprobated by some authors as not according with the results of examination after death, be found consistent with, or at least not opposed to, the evidence of morbid anatomy?

The facts above detailed have not sufficient numerical strength

to admit of any certain induction from them; but as our knowledge advances, it may appear that the tonic plan of treating phthisis is applicable to all cases, unattended by much fever, in which there is general relaxation of the body.

CHAS. HASTINGS.

THE native qualities of hardness, softness, elasticity, rigidity, and flexibility, are carefully ascribed to each of the tissues by Bichat and Beclard, in their *Anatomie Generale*; and the changes which each of them undergoes from age, generally comprising a progressive increase in rigidity, hardness, or solidity, are properly delivered in the same works.

They have not, however, touched upon many of those mutations which they are observed to undergo from the influence of disease; or which, indeed, in many instances, constitute apparently the whole disease that is present. The bones and cartilages, the firmest of the tissues, are often reduced to a state of extreme softness: while, in other cases, independently of the age of the individual, the same textures are found indurated to an extraordinary degree. The brain and nervous mass present similar changes, and the lungs, the more immediate subject of our present inquiry, are known to be found frequently in a highly consolidated state. We have shown above, that a state exactly the converse of this occasionally occurs in those organs.

The question then comes to this, What is the cause of diminished cohesion between the particles of those bodies? Is it of the same kind as in those bodies which are inorganic? Or, is it modified by the laws of *life?*

When we examine the states of the system under which these changes take place, we find that there are two conditions of vascular action, at least, generally considered as opposite, which may prevail. In rickets and mollities ossium, vascular action is weak, the moving powers are deficient. In the subacute stage of inflammation, again, we see the uvula, spleen, liver, stomach, intestines, and perhaps also the lungs (as in the cases noticed by Andral), become soft, lax, easily torn, and considerably augmented beyond their natural volume.

"It is probable," says Dr Young, in his admirable Lectures on Natural Philosophy, "that the immediate cause of the lateral adhesion of solids, (*i.e. of their solidity,*) is a symmetrical arrangement of their constituent parts: it is certain that almost all bodies are disposed, in becoming solid, to assume the form of crystals, which evidently indicates the existence of such an arrangement, and all the hardest bodies in nature are of a crys-

talline form. It appears, therefore, consistent both with reason and with experience, to suppose that a crystallization, more or less perfect, is the universal cause of solidity," p. 628. Whatever is to be admitted with regard to inanimate matter, and of that, too, there is little cause for doubt, it seems very probable that this doctrine obtains entirely in the animal tissues. The rectilineal, or regular curvilinear arrangement, is the essence of crystallization; and as a fibre is nothing more than a string or thread of particles arranged in this way, and AS EVERY SOLID TISSUE IN THE ANIMAL BODY IS FIBROUS, it follows, irrefragably, that every solid tissue in the body is crystalline.

The solidity, therefore, and natural structure of the animal solids, depend upon crystallization.

But there are circumstances which retard or modify the due completion of this process, and which are well known in the philosophy of the inorganic world. These are, chiefly, the presence of other substances,—rest,—the action of light or heat; and it comes to be an object of inquiry, to which of these ought the modifications of animal crystallization to be ascribed? Light and heat are almost constant quantities, and we can only in fairness attribute such modifications to a change in the quantity or quality of the secretion. Of the change of quality, in the secretion, we know little; and, in rickets, particularly, and the softening of the brain, it is rather improbable that such a change takes place. The problem then becomes reduced to a simple term, the *quantity* of serous or other secretion present: and as it is known that the presence of albumen, mucus, or of almost any animal matter, retards, or totally prevents crystallization; and as we have seen that this term is synonymous with solidification, and modifies its degrees, it is not too much to allow, that changes of the natural solidity of parts depend upon the excess of these matters present in the part. The older authors expressed nearly the same thing, by saying that its solidity depended on the quantity of *moisture* present, though their idea of its mode of operation was simply mechanical. Thus, Dr James Gregory, in his Conspectus, Art. LXXXII., says, after Gaubius, "The causes of increased or diminished softness and elasticity are no doubt manifold; but still they are susceptible of being reduced to certain heads. Thus the mere chemical composition of the matter may be changed; or, without this, the particles are occasionally so *disposed*, that they attract each other with increased or diminished energy. Nay, in respect of chemical composition, the whole of the primary elements may possibly vary in quantity, and thus individually induce in each its own peculiar morbid state. But of many of these we have no precise knowledge; and it is sufficiently established, that the fluid parts of the body, which mostly consist of water,

and the solid parts, which are constituted of a variety of elementary principles, vary much at different times, and in different circumstances. The more fluid matter there is present, the less adhesion, or power of elasticity, will there be, but the more softness; and the reverse of this, if there be an excess of dry matter in their composition." Age, diet, varieties in the assimilating process, hygrometric circumstances, and the mode of life, constitute the chief exciting causes of these differences in solidity, according to the same author.

That the change is merely a modification of the crystallizing influence, is, however, proved by the fact, that, under every exception to the conditions just specified, frequently the softening and hardening of tissues may be found to take place; and these two opposite states occur in the exostosis of the same bone, or in the same hemisphere of a morbid brain. Exostosis, and other morbid formations of this kind, often assume new figures of crystallization, and hence are divided by systematic authors into *spherical*, *crystalline*, *stalactitic*, *cellular*.

Lastly, as these modifications take place in diseases wherein the bloodvessels easily part with their contents, as in scurvy, syphilis, rickets; or as the result of inflammation; it follows, that, probably in every instance of softening of tissue, this effect is the result of impeded crystallization, from the presence of an excess of animal fluid. In *mollities ossium*, and in rickets, this excess of animal matter in the bone becomes very manifest, whilst, at the same time, the quantity of calcarious matter, which is carried off by the kidneys, and known as a symptom by the name of *chalky urine*, demonstrates that there is no want of those materials in the system, but merely some obstacle to their usual mode of aggregation. It is not here necessary to assume any mysterious intervening action of the vital principle; it is enough to know that the absorbents are constantly at work, and that the particles of matter naturally go on, acting and reacting on each other, for a very long period. Thus the gelatinous, or perhaps perfectly fluid, mass, which constitutes the nucleus of a common calcarious stalactite, is at first without any regular arrangement; but as atmospheric *absorption* of moisture proceeds, the solid particles are brought nearer to each other, they exert their mutual aggregative attractions, arrange themselves in right lines, and, finally, in those beautiful crystalline forms, which render them the delight of the curious, but which are always most perfect in the oldest part of the stalactite.

The idea, then, of the cases of softened lung above described, may be, that an undue deposition of the serous parts of the blood had taken place in its texture, with the double effect of promoting the absorption, and diminishing the cohesion, of solid particles of that viscus.

Observations on Syphilis and Mercury. By J. Brown, M. D. Sunderland. In a Letter to one of the Editors.

My dear Sir, *Sunderland, August* 16. 1826.

The following observations on some obscure points in the history of syphilis, were written a few years ago, but never printed; nor should I now have requested a place for them in your pages, had not the publication of Dr Hibbert's very learned and ingenious Remarks on Yaws and Sibbens, shewn that you do not consider disquisitions of this nature, which are perhaps rather scholastic than practical, alien to the scope of your Journal. You will observe, that the explanation here offered of the severity and prevalence of the venereal disease, at the close of the fifteenth, and commencement of the sixteenth century, differs from that of the intelligent writer whom I have taken the liberty to quote; nor has the perusal of his essay led to any change in my opinion. The evidence that the disease in question, if not in every instance, yet, in a vast majority of instances, commenced in the genitals, and, both in the duration of the latent period, and in its course, when established, differed from framboesia, is so conclusive, that I am compelled to withhold my assent from the Doctor's hypothesis. Let us, on these points, take the evidence of two of the best informed and earliest writers of the period.

Marcellus Cumanus, who was physician to the Venetian army which besieged Novarra, in 1495, where his opportunities of witnessing the disease were most ample, thus writes:—"I protest that I saw many suffer pustules on the face, and over the whole body, commencing generally under the prepuce, or on the outside of the prepuce, like a grain of millet-seed, or on the glans, with some itching. Sometimes one pustule began like a small vesicle, without pain, but with itching; they rubbed it, and then it ulcerated like corrosive herpes *; and, after some days, they fell into distress, on account of pains in the arms, legs, and feet, with great pustules †."

The *latent* period of yaws, we learn from Dr James Thomson, is from *seven* to *ten* weeks; whilst the duration of the disease is various: some will get rid of it in *six* months, others not

* The expression in the original is "tanquam formica corrosiva," by which term the authors of the period designated the ἕρπης ἐσθιομένος of Celsus and the Greek writers. This shews that what I shall term the primary ulcer, possessed a phagedenic or sloughing character.—Vide *Celsum de Medicina*, lib. v. cap. 28.

† Marcelli Cumani Observationes Medicæ, apud Gruneri Aphrodisiacum, p. 52, et seq.

till *twelve;* the average may be stated at *eight.* Let these periods be compared with the following abstract of the first case detailed by Gaspar Torella, physician to Pope Alexander VI, an able and a strictly contemporary writer.

"Nicolaus Minor, a Valentinian, in the month of August, had connection with a woman labouring under pudendagra*. On the following day, an ulcer appeared on the penis, with some degree of hardness, extending, in a radiated manner, towards the groins, with foul, virulent discharge. *Six* days after, the ulcer being half healed, the patient was attacked with pains of the head, neck, shoulders, arms, legs, and ribs, especially in their muscles, with sleeplessness at night. *Ten* days after, many pustules appeared on the head, face, and neck. The pains and pustules remained in the same state on the 2d of October." Torella then commenced his constitutional treatment, which it would be superfluous to detail; but, through his prolix formulæ, and verbose explanations, it is not difficult to perceive that it was very judicious. "Sixteen days from its commencement, the patient returned thanks to the physician for his total exemption from pain; and, in twenty-four days, that is to say, in the latter end of October, he was freed equally from pustules and pains †."

It will at once be perceived, that, in its latent period, and duration, this disease differed from yaws as widely as well can be imagined; so that, to multiply authorities in support of this opinion, would but add to the tediousness which is perhaps inseparable from the subject. I remain, &c.

J. Brown.

Accurate knowledge of the origin and history of diseases being of very difficult attainment, though of unquestionable importance, not to the physician only, but to the statesman and political economist; and, as facts apparently insignificant, may, on further extension of our knowledge, be found to admit of an application which we are at present far from suspecting, he cannot be justly accused of dealing in good-for-nothing lore, who endeavours to correct any errors on these important points, which *now are*, or are likely to *become*, popular. The following cursory observations, some historical and others practical, were

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* The name given to the disease by this writer, and that of "Mentulagra," bestowed upon it by Grundbeckius, furnish strong evidence of its having been really a venereal one.

† Tractatus cum consiliis contra pudendagram seu morbum Gallicum, impressus Romæ per Magistrum Petrum de Laturre, anno 1497.

suggested by the perusal of a very able article, entitled, " On Syphilis, Pseudo-syphilis, and Mercury," in the last (December 1821) number of the Medico-Chirurgical Review. It appears, from the account given of the different works named at the head of the article in question, that the errors I shall presently indicate ran but little risk of diffusion, had they not been transferred to the pages of the Journal in which I saw them. They existed originally in a manuscript by Dr Henry Thomson, who, we are informed, has no intention of committing his work to the press; but, as they cannot fail to be extensively circulated through the medium of the Review, and as their admission there, without comment on the part of the reviewer, or of any writer since that date to the present, is a sufficient proof that correct information on the early history of syphilis is by no means general, they may furnish an apology for the few observations I am about to make on the subject.

The first error of Dr Thomson's consists in his asserting, that the army of Charles VIII. " besieged Naples," and " lay long before that city, in want of provisions, and in a state well calculated for the generation of infection." Now, the French army did not besiege Naples, and did not lie long before the city, but entered it, without siege or opposition, on the 21st of February 1495 *. Charles indeed entered by the invitation of the Neapolitans themselves, on the flight of their king (Ferdinand) to Ischia.

Again, we learn from Dr Thomson, through the medium of his reviewer, that " Gabriel Fallopius, who read lectures on the morbus gallicus, sixty years after its supposed importation, is the first who mentions its foreign origin." Here I must observe, that, previously to Fallopius, we have Oviedo, in 1525, about thirty years after its supposed importation; Guicciardini, who died only forty-six years after the epoch of the appearance of the disorder; and others whom I shall presently quote or allude to, asserting its foreign origin.

It may here be observed, that these errors are, and can be, of no practical importance, and that, consequently, to point them out, must be a work of supererogation. But to this it may, with justice, be replied, that their existence, where I found them, furnishes sufficient evidence of the very loose notions prevailing, in highly respectable quarters, respecting the origin of syphilis; and these probably explain the " shadows, clouds, and darkness," that are said in the work I have quoted, to " rest upon it." Besides, in science as in morals, it is impossible to foresee all the results of an error,—one false step leads to many. May I then be allowed to occupy a few pages of your journal by an attempt

* Guicciardini, vol. i. p. 224.

to illustrate the obscurity in which the historical part of the subject seems at present to be involved, and by a few suggestions of a more practical nature. For the accuracy of the facts cited, I will vouch; at least I can assert, that no pains have been spared to ascertain their correctness; but of the deductions from them it behoves me to speak more cautiously. For these I ask only such a share of attention as to impartial, but competent judges, they may seem to merit; if worthless, let them be neglected. "In limine," I must deny that the disease was imported by Christopher Columbus, and for the following reasons.

1*st*, On account of a want of impartial evidence, strictly contemporary in favour of the importation of syphilis from America into Europe, or conclusive even, as to its existence in the western hemisphere.

2*d*, From a comparison of the dates of the transactions involved in this question, it does not appear probable that the disease was brought from America, or by the Spanish army of Gonsalvo de Cordova, to that of Charles VIII, which all contemporary writers on the subject concur in representing as having been affected with it.

With respect to the first point, the nature of the evidence for the affirmative, let us examine that of Oviedo, the witness on whom the advocates for importation (Astruc and others), place their chief reliance.

This man was director of the mines in Espanola (St Domingo), at the period that the virtuous Las Cosas was interesting himself at the court of Charles V. on behalf of the hapless inhabitants of that island, then reduced in numbers from one million to fourteen thousand *, by the brutal inhumanity of their oppressors. The interest of the Spanish colonists, and that of Oviedo, led them to misrepresent the character of their innocent victims; and this consideration alone is sufficient to render such a historian's testimony of equivocal value; for no plan could be better devised for rendering the Haytians odious, than attributing to them the calamity which had recently been so severely felt throughout Europe.

This author's "Sommario," his first work on the subject, was not published till 1525, thirty-two years after the supposed importation. In this he positively asserts, that the disease was introduced by Columbus, on his return from his first or second voyage. He says, that *he believes* that Pedro Margarita (one of the most distinguished of Columbus's followers in his second voyage), was

* This was the state of the colony as early as 1515, or twenty-two years after its discovery. The solicitations of Las Cosas terminated in the establishment of the slave trade.

affected with the disorder. His words are*: "He went about in so much pain, and complained so much, that he likewise, *I believe*, had the pains which those are accustomed to have, who are afflicted with this disorder; but I saw no pustules about him." This was at Burgos, where Ferdinand and Isabella resided in 1496, and Oviedo describes the disease as spreading about the court, though, at first, only among the lower class, "personas baxas y de poca autoridad." At this time Oviedo was a boy, and the "Sommario" was published twenty-nine years after the occurrences which he records as an eye-witness. Even from his account, it is not very clear that Margarita was affected with the disorder in 1496 (so far as we gather from Oviedo, it may have been mere rheumatism); but allowing that he was, this could not be the period of the introduction into Europe of a disorder, that had already existed two, if not three, years in Italy.

In his "Historia Generale," he repeats the accusation against the Indians, in the form of a general assertion without much detail; and, so much as he ventures upon, is little calculated to add to the credibility of his narrative. For instance, he speaks of an animal called Irano (probably the Iguana), existing in St Domingo, which the christians there eat, and were fond of; but it had one trifling inconvenience,—it induced relapse of the disease (Mal de Buas), though this had been for some time cured.

He mentions guaiacum and lignum sanctum, and extols their efficacy in the disorder, especially that of the latter. By way of confirmation of his hypothesis, he informs us, that "*where* Divine Providence has for our sins permitted the evil, *there* by its clemency it provides the remedies,"—alluding to the above named plants.

The writings of Oviedo are the stronghold of those who advocate the doctrine of importation. I have shewn that he is not an impartial witness, neither was he, in the proper sense of the term, a contemporary one, being but fifteen years old, when the disease is said first to have appeared, and but eighteen when Margarita was so ill as he describes him to have been. He went to America in 1513, and granting what he declares he saw there to be correctly stated, it by no means follows that we derived the disease from beyond the Atlantic,—we might have sent it thither. This supposition may derive confirmation from the reflection, that, excepting this alleged importation of syphilis,

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* How ill does the positive assertion of Astruc "Petrus Margarit, nobilis Catalanus, *qui jam lue venerea graviter ægrotabat*," agree with the doubting expression (tambien yo creo) of Oviedo, which I have translated literally from the original Spanish. *Vide* Astruc, Latin edition, vol. i. p. 74.

we have derived no diseases from countries discovered by us; but have sent many to them: witness the transmission of small-pox to St Domingo, by which it was nearly depopulated.

Francisco Lopez de Gomara, chaplain to Herman Cortez, accompanied that celebrated person to Mexico in 1519, and he certainly asserts, that the inhabitants of Espanola *all* laboured under the disease, and that they gave it to the Spaniards, who repaid them in "viruelas" (small-pox.) He was not, any more than the last quoted individual, a strictly cotemporary writer, his work being published at Medina del Campo in 1553;—and he being the companion of Cortez, his testimony is justly liable to the same suspicion as that of Oviedo. Having mentioned so high an authority as that of Guicciardini, I may be allowed to observe, that, being born in 1482, he would be only eleven or twelve years of age when the disease appeared; and, though he asserts that the disease was brought from America, he says this was not the opinion on its first origin, but one which had been subsequently entertained.

In the History of Christopher Columbus, written by his son, Fernando Columbus, we learn, that, on the Admiral's third visit to St Domingo, he found "all the families of the island in great tumult and sedition, so that most of the people he had left there were dead, only one hundred and sixty men remaining, full of the French disease (plenos de Mal Francés)." The very expression employed shews the writer's exemption from the opinion we are endeavouring to refute; but, besides, this was in 1498, and the men thus affected had been carried out by Columbus, in his second voyage in 1496; consequently their then labouring under the disease is no evidence of its having been introduced into Europe from the island. The total silence of the writer on this point,—his having omitted to mention, in a work, compiled from original memoirs of the Admiral himself, any new or extraordinary disease, with which the crews, during the first and second voyages, were afflicted, or which they imported, speaks volumes against the transatlantic origin of the disorder.

Peter Martyr d'Angloria, who compiled his treatise "De Novo Orbe," and his "Decades de Rebus Oceanicis," from original memoirs transmitted to the Supreme Council of the Indies, of which he was a member, says, in his first work, that the inhabitants of the Island of Espanola have "a disease attended with large pustules affecting the body, and corroding the members, if they are too much addicted to luxury, and that this malady is contagious to other regions, by cohabitation and intemperance with those (male or female) who are affected with it."

In his "Decades" he speaks of a class of men amongst the

islanders, " who are scabby and leprous, and who have rough and callous hands, so that they retain more easily any thing they may have seized. They are called Caracaracoles." He omits all mention of the venereal disease by any term by which it was then designated, and of the importation into Spain of any peculiar disorder.

Franciscus Romanus Pave, who accompanied Columbus in his third voyage, speaks of these caracaracoles. He says, " The caracaracol is an infirmity like tænia (como tigna), which causes great roughness in the body." He, too, is silent respecting syphilis, or its importation.

Leonard Schmaus, a German, in 1518, asserts that the disease existed in the New World, but its origin in this he attributes, with most contemporary writers *, to atmospheric causes, and not to importation. Hence, as his opinion embraces only a part of the question at issue, and this not a very material part, as will be subsequently shewn, and, as he merely asserts the fact, without attempting to prove it, I shall not occupy my pages by a formal refutation.

Ruy Diaz de Isla, an oft quoted authority, gives the disease the name of " Morbus Serpentinus Insulæ Hispaniolæ," and says, it was brought from that island to Barcelona, by Columbus's crew. He speaks of fasts, religious devotions, and alms, being instituted against the disorder. He did not write till 1555, sixty-two years after Columbus's return.

Many witnesses not brought forward by Astruc, have now been cited; and of those whom he has mentioned, A. Musa Brassavolus, J. Baptista Montanus, Gabriel Fallopius, and the Père du Tertre, alone remain to be examined. Brassavolus having published in 1551, Montanus in 1554 and 1557, and the work of Fallopius not having appeared till 1564, whilst none of these individuals were so circumstanced as to know any thing about the matter in question, excepting from the reports of others, it seems sufficient to point out with respect to them the facility with which an error once admitted passes through the pages of a series of writers. The Père du Tertre is an author of a much more recent date even than these; and the disease which he describes at the Antilles, and of which he says that it arises, " Non seulement de l'usage des femmes, mais encore d'elle-même"†, he tells us is called Pian, which we now know to be the Yaws. That this disease existed early in America, is very probable, as the importation of Negroes from the Portuguese African settlements to the former country, began as early as

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* The astrologers, who tell us of planetary influence, furnish the only exception.

† Histoire Generale des Isles de Christophe, &c.

1503; and this infernal traffic was reduced to a regular system of commerce in 1517, by some Genoese merchants, to whom a Flemish favourite of Charles V. sold a patent, granted to him by that monarch, to purchase and convey to St Domingo four thousand blacks. But what the worthy father may have seen or described is quite unimportant. He wrote in the seventeenth century, and is introduced here, merely because he is one of Astruc's authorities. Were the works of all to be criticised, who have unreflectingly, and without sufficient scrutiny, adopted this hypothesis, those of our own eloquent Robertson must undergo the ordeal*.

We may now be allowed to sum up the evidence, by the mere recital of which, I have already, perhaps, exhausted my reader's patience. It will have been observed, that only three of the writers quoted have recorded their opinions at a period, or were placed in a situation to render them competent witnesses of the matter, and these three observe an entire silence with respect to importation; while the brief description of caracaracol given by two of them, and that of the pustular disease, mentioned by Peter Martyr, do not, by any means, warrant our concluding them to have been identical with syphilis. Should we, thirty years hence, be satisfied with the bare assertion of any individual, who should tell us that the fever, which lately ravaged Barcelona, was imported from the United States; while writers, contemporary with the event, attributed the disorder to a different origin? Should the controversy respecting epidemic diseases *then* exist (which, by the bye, is not very improbable), would the contagionist have any great reason to congratulate himself on such testimony? However apparently conclusive the arguments of such a writer might be, they would not, in this cautious, scrutinizing age, make a single convert, unless supported by some contemporary authority. When syphilis committed its ravages, writers on the subject abounded,—there are extant, in whole or part, the works of above twenty within the first ten years after its appearance: but none of them speak of Columbus, or importation.

The accusation brought by Oviedo, Lopez de Gomara, &c, against the Indians, is of a very vague and general nature, destitute of all comparison between the character of the diseases with which the Americans and Europeans were respectively affected,—devoid, indeed, of every thing calculated to give it credibility; while the leading witness was in a situation which rendered his evidence peculiarly liable to suspicion. Besides the silence of Columbus the son, and Peter Martyr, we find that

* It is but justice to Robertson to state, that his opinion on this subject underwent subsequently some modification. See America, Ed. 8, vol. i. page 4.

Resenda, gentleman of the bedchamber to King John of Portugal, at whose court Columbus was presented on the 7th of March 1493, on his return from his first voyage,—Resenda, I say, who published memoirs, in which this transaction is mentioned, observes an entire silence as to any new or singular disease, with which the Admiral or his crew was affected. Silence on such a point, and observed in quarters so numerous and important, I cannot help regarding as positive evidence of their exemption.

The affirmative, then, not having been proved, I would almost venture to say, having been disproved, I shall touch but briefly upon the second part of my argument. These quotations from authors now obsolete, and this minute examination into dates, are apt to prove tedious; but I must crave a little indulgence in this respect, as it is highly incumbent upon me to avoid an error which I have shewn some disposition to reprehend in another.

Columbus returned from his first voyage on the 13th or (according to Robertson) on the 15th of March 1493, and from his second on the 8th of June 1496. The disease in question existed in Italy, according to Pintor, Delphini, and Baptista Fulgosa, in 1493, and in France, according to Gaspar Torella, in the same year; but I shall not insist upon these authorities, as I think my case sufficiently strong to admit my dispensing with them; considering that the disease was prevalent (as it unquestionably was, according to the testimony of all contemporary writers) in Italy in 1494 and 1495, and that the army of Charles VIII. was affected with it.

The negative testimony for the exemption of Columbus's crew, on their return from their first voyage, from any new or singular malady, is so strong, that the advocates for importation have not generally selected that as the epoch of introduction; but had they done so, it would not in the least have strengthened their argument, or invalidated mine. The second return not having taken place till 1496, is of course out of the question; but a squadron under the command of Antonio Torres, having on board Father Buyle, a Catalonian monk, appointed apostolic vicar of the Indies by Pope Alexander VI.*, and Pedro Margarita, the individual whom Oviedo described as being affected with the disorder, left the Island of St Domingo on the 24th of February 1495 (not in 1494, as asserted by Astruc), and from the men of this squadron it is supposed that Gonsalvo de Cordova may have received the recruits who conveyed this direful disease into Italy, and infected the army of Charles. Columbus, to perform his first passage homeward, required two

* Robertson's America, vol. i. p. 126. Ed. 8th.

months and nine days. Allowing this squadron to have returned in two months, the 24th of April would be the date of its arrival; and it is not very probable that any men from on board of it should have formed part of an army that sailed from Spain, remained some days at Messina, and disembarked at Reggio in Calabria, on the 31st of May. But, granting that such men *did* accompany the Great Captain, still they could not have communicated the disease to the troops under the immediate command of Charles, which were unquestionably affected with the disorder, this monarch having retired from the kingdom of Naples with these troops on the 23d of May, eight days previous to the disembarkation of the Spaniards. The Duke of Montpensier remained in Naples with part of the army.

"*Satis superque;*"—but of troops who had no communication with the Spaniards, being affected with the disorder, we have testimony so indubitable, that I cannot refrain from subjoining it here. At the time that the French were in Naples, and that the Spaniards landed there, Novarra, a town in the dutchy of Milan, was besieged by the conjoined Milanese and Venetian forces; and this besieging army, in the north of Italy, so remote from all contact or communication with the Spaniards, was infected with the disease, as we learn from its physician, Marcellus Cumanus, who has given us an excellent description of the disorder as it then and there prevailed. He says it arose from atmospheric causes, or, to use his own phraseology, "ex influxu cœlesti," concurring in this view of the subject with all his contemporaries.

My own view of the subject is as follows, for, after demolishing the prevailing theory, it is but reasonable that I should endeavour to supply another. Venereal diseases have existed in all ages, at least in all ages of which any medical record is preserved. During a certain period (that to which the origin of syphilis is referred), they acquired a virulence and prevalence that might be considered as epidemick; they attracted more attention, and their nature was more fully ascertained;—in short, the pathological views at present existing then first took their rise, and a name was given to an assemblage of symptoms, each of which had previously been regarded as an independent disease.

I shall not burthen my pages with evidence of the antiquity of disorders of this class. That they are mentioned by Greeks, Romans, Arabians, and Arabistæ, or the medical writers of the middle ages, who derived their doctrines and practice from the orientals, is matter of notoriety. To some of these writers their contagious nature was known, and even the connection existing between part of the symptoms, though all of these were not regarded as a whole, designated by any peculiar appellation.

Ulcers of the genitals are described; by some they are said to be contagious; by others, the origin of buboes is attributed to them; but by none of these writers are what we are accustomed to regard as the secondary symptoms referred to the primary disease. Yet I am by no means disposed to regard this silence with respect to the more remote effects of the virus as evidence of their absence. Any contagious sore may, in the present day, be followed by constitutional symptoms; even sores, that do not deserve that epithet, as in Mr Hunter's tooth cases, may produce such effects; and if these are unnoticed by the ancients, an explanation of their silence must be sought rather in their limited knowledge, or some peculiarity of their doctrines, than in the mutability of Nature. She is consistent, our knowledge of her phenomena becomes more and more extensive, and our reasonings respecting them vary. This is quite a different question, from the origin of a disease supposed to be new, as smallpox for instance. We find it to be a law of nature, that when the diseased secretions (and even occasionally the healthy ones * of one individual) are applied to the person of another, and there produce ulceration, in a proportion of such instances, certain constitutional derangements, marked by eruptions on the skin, &c. shall follow. Those writers who attempt to make a distinction between syphilis and the diseases resembling it, acknowledge the latter to have been known to the ancients, and, at the same time say, that they are now followed by secondary symptoms:— the inference is obvious. There is no want of descriptions of affections of the skin, and even of the bones similar to those which occur in venereal cases, in the writings of authors of a date considerably anterior to the discovery of the New World. Beckett † supposed, and with great probability, that many such symptoms were treated in the lazarettos of the middle ages under the name of Leprosy. We learn from Forestus, that not one in ten of the patients treated in those establishments were real lepers, or had legitimate elephantiasis; and, amongst the various diseases admitted there, it is very probable that affections of the skin consequent on the venereal complaints might be received. This opinion derives confirmation from an observation of John of Gaddesden, who informs us, that he who lies with a female recently connected with a leper, is apt to have ulcers between the glans and prepuce. Dr Adams, in his account of the Lazar-house at Funchal, assures us, that elephantiasis is not contagious; but, on the other hand, the very learned author of the "Physiological System of Nosology," is of opinion, that the testimony for the contagious character of true

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* As in the tooth cases cited.

† Philosophical Transactions.

elephantiasis or juzam of Arabia and the East, is so strong that there can be no doubt upon the subject; and thinks its non-contagious nature, if confirmed by future observation, sufficient to constitute the disease observed at Madeira and elsewhere, a variety of Lepra Arabum. However this question may be settled, it does not appear that contagious ulcer of the penis is a symptom either of the real juzam or Dr Adam's variety; consequently the disease mentioned by John of Gaddesden, was not genuine leprosy, nor can I conceive it to have been any thing but what I have conjectured *.

It is evident, that, unless the course of nature be changed, secondary symptoms occurred long prior to the era of the supposed new disease. Let us, then, attempt an explanation of the silence of the ancients on this head. In the animal economy, as in other departments of nature, if one phenomenon succeed uniformly to another, we feel no doubt of their connection, and our belief in such connection, in cases where doubt is admissible, is in proportion to the frequency of the succession. In this instance, do constitutional follow primary symptoms so generally, as to render a doubt of their being to each other in the relation of cause and effect, very extravagant? Have we not all of us occasionally doubted the connection between certain symptoms a patient laboured under, and previously existing ulceration of the genitals? In many cases, has there not been great discrepancy of opinion between practitioners of talent and experience? The highest ratio I ever heard stated, of the occurrence of secondary from primary symptoms, treated without mercury, was one to three †. I saw the experiment tried on an extensive scale, and during a period of three years in the hospitals of the army of occupation in France, and there the proportion was not so high as one to twenty. Did affection of the skin and throat follow, at a certain period, every ulcer of the genitals, there would be no room for scepticism, and the ancients would not have failed to perceive the connection. But there is a singular anomaly here, if any thing in nature can be said to be anomalous. Inoculate for smallpox, and if the disease be not communicated, it will be considered as a deviation from the general rule, and the cause of failure will be sought in some constitutional peculiarity of the patient; but, in the present case, the occurrence of affection of the system constitutes the exception to the rule, and must be attributed to something besides the mere application of the virus and local ulceration. What that something is we may probably never ascertain; but

* Any argument derived from the non-curability of syphilis without mercury, I may of course pass over unnoticed.

† By Mr Rose, if I recollect right.

it has evidently a right to be regarded as an important link in the chain of causation. A modern writer has boldly denied the connection we are speaking of. I am certainly not disposed to go along with this dashing Frenchman *, who displays the characteristick contempt of his countrymen for prevailing opinions; yet it seems very credible that what he, with a perfect knowledge of the absorbent system, and of the doctrines derived from it, rejects, though considered as established, the ancients without such knowledge, and viewing objects through the medium of their peculiar theories, may have failed to detect. During the period alluded to, the origin of all diseases was attributed to the prevalence of some humours; and a writer of those days, whilst torturing his ingenuity to discover whether an eruption arose from cholera alone, or from this mixed with phlegm or black bile, might readily overlook a small ulcer that existed three months before. The knowledge of the circulation and absorbent system has altered, and I hope, too, improved our pathological views, in a degree of which none can be aware but those who have occasionally turned over the musty tomes of antiquity. In perusing the Greek and Latin writers, and those of what are termed the middle ages, their peculiar doctrines must be kept in view, or they will be as unintelligible to us, as Cicero and Tacitus would be to a reader who should forget that the social and political state of the Romans was not identical with our own.

I shall now venture to offer an explanation of that peculiar prevalence and severity of the disorder towards the close of the 15th century, which led to the opinion that it was new, and subsequently that it had been imported. It may here be observed, that the former of these opinions did not any more than the latter receive universal assent, but gave rise to much acrimonious controversy, which was poured forth, with due scholastic gravity, in the form of syllogisms and enthymems.

To attribute an effect on diseases of this class to peculiar constitutions of the air, though it may startle some persons, will receive due attention from those who have been in the habit of observing them attentively in different parts of the world, and who, at the same time, have been accustomed to reflect on the wide range of atmospheric influence. At the period I have mentioned, the malady was generally considered as epidemic, and the state of the seasons and the political circumstances of Italy, were well calculated to give credibility to the hypothesis. That unhappy country was ravaged by wars; famine prevailed, and

* See a pamphlet published in Paris, "Sur la Non-existence de la Maladie Venèrienne.

of the extent of the inundations, so fertile a source of epidemics in warm climates, the following passage from Leonicenus, the best contemporary medical writer, will convey an idea.

"In that year," says he, "in which the morbus gallicus began to arise, there was a great exuberance of waters throughout Italy. Rome is witness, which first felt the disease, where the Tiber swelled so much that it (the city) became entirely navigable; as at Bologna the Reno, so at Ferrara and Mantua the Po, and at Venice the Brenta, overflowed their ordinary limits. Finally, the whole year was wet with such showers, and the ground so humid and stagnant, that it is not matter of surprise, that the summer season should have attained that warm and moist distemperature, which all philosophers and physicians regard as the mother of putrescency."

He subsequently compares the state of the seasons and the general circumstances of his country, to those with which it was afflicted at the time of the ravages of the Goths, when a pestilence arose, to which Pope Pelagius fell a sacrifice. The modification of measles, dysentery, and various other diseases from atmospheric influence, is far too notorious to require any illustration here.

In times more recent, an exasperation of syphilitic symptoms from atmospheric causes has been noticed. A few years ago, a small book or pamphlet was written by Mr Geoghegan, describing such an aggravation of these complaints during one season in Ireland; and, I think, it must have occurred to most experienced medical men to observe something of this kind. The peculiar character, too, with which the disease seemed invested, when it affected our troops in Portugal *, may be quoted as evidence on this point. That state of the system,—that proneness to disease,—which the inhabitants of such as are cold experience on removing to warmer climates, and which remains till they are, as it is technically termed, seasoned, may be not unaptly compared to the constitutional condition of the inhabitants themselves, when the atmosphere is exerting an epidemic influence. An European, on first going to the West Indies, may have the seasoning fever at any time: long residents are attacked only at sickly periods. In Portugal the disease amongst the natives was exceedingly mild: whilst our own unseasoned soldiers were most severely affected, so that many of them suffered, to use the words of the author just quoted, the most melancholy of all mutilations. The same mutilations occurred in Italy. Fracastorius informs us, that, on the first appearance of the disease, "quibusdam consumpta sunt labia, alias *pudenda tota.*" That sloughing ulcer

* See Dr Ferguson's valuable Paper in Medico-Chirurgical Transactions.

of the penis occurs in moist summers, when southerly winds prevail, is a remark as old as Hippocrates, and is repeated by Galen *.

A certain correspondence of character between primary and secondary syphilitic diseases affecting any individual, has often been remarked. This is to be expected. The constitutional derangement, whether sporadic or epidemic, which invests the local affection with its peculiar form, cannot fail, if unsubdued, to exert an influence on the secondary disease. Mr Carmichael has described the form of eruption consequent to sloughing or phagedenic ulcer of the genitals †. It was pustular, degenerating into depascent ulceration. This was the character of the disease of the 15th century, as drawn by a contemporary:

"They (the pustules) were of the size of an acorn cup. In a few days they opened and poured forth a fetid mucus; nor can it be described how much of this mucus perpetually flowed out. Then ulcerating they ate the parts like phagedenic ulcers."

It is very credible that such a discharge of purulency as has just been described, may have possessed the power of propagating its kind; and that, in fact, the secondary symptoms may have been communicable by close contact, as asserted by the last quoted author (Fracastorius) and others. But we should hesitate before we place implicit confidence in an explanation of their occurrence among the profligate ecclesiastics of Italy, which was so likely to be offered by physicians, of whom some actually belonged to that body, and all either possessed or hoped for its patronage. The general licentiousness of the age was sufficient to account for the general prevalence of the disease amongst all ranks and professions in every part of Europe, without recourse to an hypothesis, which the learned had such strong motives for engendering, and which, from reasons of a similar nature and ignorance, could scarcely fail to be propaga-

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* It was one of the symptoms of the plague at Athens, a calamity with which scholars have been taught to sympathize by the prose of Thucydides, and the poetry of Lucretius.

† Not having Mr Carmichael's work at hand I quote from memory, and have employed rather a doubting mode of expression. I know I am correct with respect to the fact so far as it applies to my argument; for whether the form of local disease was sloughing or phagedenic, is immaterial in this point of view. The two forms are very closely allied; and the main fact, that one or other produced an eruption, terminating in destructive ulceration, sufficiently illustrates the modification of both stages of the disease by constitutional peculiarity. I have frequently witnessed such correspondence as I have adverted to: but was glad of an opportunity of referring the reader to a work of deserved celebrity. That Mr Carmichael and myself would offer different explanations of the fact, does not detract from its importance. The point on which we differ I shall probably recur to subsequently.

ted among the vulgar. Besides, it must be remarked, that those authors, who asserted that the disease was communicable by mere contact, without coition, were equally ready to declare that it occurred spontaneously, without contagion from any quarter. So loose, in those days, were the opinions regarding the origin and propagation of diseases *.

I know not whether my attempt to elucidate the obscurity that has hitherto prevailed on this subject has been successful. My opinions may be thought to require more illustration from contemporary authority than has been bestowed upon them. But no fact is advanced excepting on competent authority: and to accumulate quotations, all bearing on the same point, might fatigue the reader, but would not necessarily increase his conviction.

Errors, of a nature more practical than those already alluded to, have, as I conceive, recently prevailed amongst us with respect to this disease, and seem to have arisen from mistaken ideas concerning the agency of mercury in its cure. From this source have been derived two expressions, founded, as I suspect, on misconception, which may be considered as forming part of the fashionable cant of the day,—pseudo-syphilis and mercurial disease. Morbid poisons (to use a term that has been a good deal cavilled at) affecting these parts, have been supposed to be numerous; but to one only, for which we are indebted to Christopher Columbus, belongs the honour of generating real syphilis; to this disease mercury is exclusively applicable; and for its discrimination from its mimic kinsfolk, a degree of tact is required, that is possessed only by the chosen few. That one contagious sore on these parts merits more than another the epithet syphilis, seems very questionable. It is an opinion that exists in this country only; and the wire-drawn speculations derived from it have exposed us to much, and I suspect merited, ridicule on the Continent †. If the hypothesis rest upon one form of sore, essentially requiring mercury for its cure, (and I can conceive no other foundation for it,) no farther discussion is required.

The whole doctrine of the multiplicity of venereal poisons seems to repose on very doubtful evidence, or on incorrect reasoning from evidence. One poison, we are told, produces a superficial; a second a deep and callous; another, a phagedenic; and a fourth, a sloughing ulcer. This variety in the character of sores obviously admits an explanation, from the constitutional state of the person suffering them, and of the correctness of this explanation we have in some instances positive proof. Dr Ferguson

* Vide Gaspari Torellæ (himself a bishop) Consilia Medica, Cons. 2 et. 5.

† See Roux's "Parallèle de la Chirurgie Anglaise et Francaise."

mentions (in the paper already alluded to) the disease of a young officer in Lisbon, which had become gangrenous, and was about to terminate in destructive sphacelus, when it was checked by the decision and vigour of that intelligent physician. This disease was contracted from an opera dancer, who infected many others, in whom no violent or peculiar symptoms appeared. I have minutes of the case of a soldier in a numerous garrison; who, having been in a state of almost uninterrupted intoxication for nearly a fortnight, contracted syphilis, which terminated in sloughing, and very extensive loss of parts. This disease was communicated by a woman, who had herself the disease mildly, and imparted to many others a disorder characterised by no peculiar virulence. Here, then, is evidence that the peculiar form of the disease arose from constitutional causes, and not from specific difference of virus. These refined speculations are not supported by analogy. In families, many children shall have scarlatina or measles, or smallpox mildly, whilst others are, at the same time, violently affected with one of the two former diseases, or have confluent variola. We are not in the habit of attributing these varying degrees of severity to specific difference of virus; indeed, we have evidence to the contrary, and similar proof has now been furnished with respect to one form of venereal sore, and might, I dare say, be supplied with respect to others. I would not be understood as positively asserting, that there is but one poison affecting these parts, and that all ulcers are but modifications of its agency; I only mean to protest against a spirit of refining on nice shades of appearance, and a disposition to attribute each minute variety to a separate virus. The whole question of morbid poisons is very obscure, and one which I do not at present intend to discuss at any length. The only important practical distinction which has been attempted with respect to those affecting these parts (that relating to *real* syphilis) I consider as utterly fallacious.

On the subject of what has been termed Mercurial Disease, practitioners have enquired why the mineral, when administered for the cure of hepatitis, dysentery, &c. does not produce the fiery ulceration, blotch, or node, which we see arise in venereal disease, and which have been attributed to its employment. This very reasonable question has received no answer at all, or an equivocating one. The fact is, that mercury does not produce such appearances unless when exhibited for syphilis, and then the mineral does not give rise to them "*proprio marte*," nor, if the analogy of language applied to other diseases is to be observed, do they merit the appellation bestowed upon them by Mr Mathias and his followers.

The power of mercury over inflammatory action, there are

few of us who are disposed to question, but this influence is conspicuous only, when antiphlogistic measures have preceded or accompany its employment. Dr Hamilton of Lynn Regis recommended calomel and opium after free depletion in pneumonia, and there are few medical men who have not employed this combination, and justly congratulated themselves on having done so. The same may be remarked of its employment in acute rheumatism. But were any one to administer this mineral without preceding or accompanying depletory measures, and without strict attention to the antiphlogistic regimen, in one or the other of these complaints, the result, all will agree with me, would be very different. The disease would be aggravated, but would our language be tolerated, if we said it is now become mercurial? Mercury certainly does control that peculiar action of the extreme vessels which constitutes most forms of inflammation, but this it does only in the advanced, or chronic stage, or as an adjuvant to the grand antiphlogistic. Nay, I would venture to assert of the inflammation over which its influence is most conspicuous, iritis, that this will be more successfully treated if bleeding, general or local, accompany or precede the employment of the mineral; and the antiphlogistic regimen is indispensable.

To apply this to the case before us. All the products of the syphilitic virus are inflammation of one form or another. Let us take them in succession: pustule terminating in ulceration,—inflamed lymphatic gland,—inflammatory affection of the skin and throat,—iritis,—periostitis,—node. That some of these affections are aggravated by the mode in which mercury is employed, can astonish no one who reflects that mercury must act upon some principle, and this, though we cannot say precisely what it is, must be equally the mode in which it is beneficial to syphilis as to other diseases; and that, though the former, from its being a chronic form of inflammation, may not require reducing means of the same extent as the phlegmasiæ, yet exacts, in order that the mineral should be useful, an employment of those means in a moderate degree. The reasoning that has led to the adoption of the phrase "Mercurial Disease," and to not a little bad practice, seems to be the following: Mercury acts by neutralizing the virus,—enough has been given for this purpose,—*ergo*, the symptoms that remain are the effects of the mineral. Now, of this syllogism I beg leave to deny, and, as I conceive, on good grounds, the major proposition; mercury acts in the cure of syphilis as in that of other diseases, and to insure its utility, certain other means should accompany its exhibition.

Measures purely antiphlogistic suffice, as we now know, for

the cure of syphilis, which is an inflammatory disease; and did moderate measures of this kind precede or accompany the use of the mineral, we should hear less of mercurial diseases, and see fewer mutilated faces and shattered constitutions. Exposure to cold and moisture,—a diet of animal food,—indulgence in wine, cannot fail to aggravate an inflammatory disease, or counteract any agency that mercury may be supposed to exert in its cure. This agency, as I have already said, it is difficult to explain. The mineral unquestionably debilitates, but excites at the same time an action much akin to inflammation, which seems to have the power of superseding the form of inflammation that pre-existed in the affected part, or the whole constitution. It stimulates the absorbents, and hence, has great power in diminishing the hardened edges of callous ulcers. Its power over the secondary symptoms seems closely connected with its effect on the biliary secretion, and here it acts as in affections of the throat and skin, that are independent of the agency of a morbid poison in the system. In secondary syphilis, I have frequently discovered tenderness on pressure in the right hypochondrium, and manifest signs of biliary derangement. The connexion between such derangement and affections of the skin and throat, and general cachexia, where no virus can be supposed to have been absorbed, is too notorious to require confirmation. To the effect of mercury on syphilis, the expression of Mr Hunter may be applied, that "the one action supersedes the other;" but though I may adopt the phraseology of that extraordinary man, I can by no means subscribe to his opinion, that drinking a certain quantity of wine can have no influence over the specific action of the mineral. Did it neutralize virus, this would be correct enough. All that could be required, would be to pour in a sufficient quantity of it; but that the actual fact is very different, the experience of ninety-nine of a hundred of the profession will testify.

Briefly, then, my conviction is, that what has been termed "Mercurial Disease" is still syphilis, aggravated by improper treatment; and in this I am confirmed, by having repeatedly found that the antiphlogistic regimen, bloodletting in some cases, small doses of the blue pill, and decoction of sarsaparilla, constituted the most advantageous plan of treatment in this troublesome affection.

In conclusion, I may observe, that my subject has been one rather difficult to treat, "pudorem et artis præcepta servantibus:" but so closely connected are all parts of our art; the phenomena of one disease, and the effects of remedies upon it tend so much to form or confirm general principles applicable

to most others, that no fastidious feeling should determine a professional man from studying diligently any malady which circumstances may have frequently presented to his observation, or from communicating to the world the result of that study, if he conceive it calculated to extend in a degree, however insignificant, the boundaries of our knowledge.

Cases of Sudden Death, and Affections of the Head, originating from Diseases in the Thymus Gland and Chest, illustrated by Dissections. By Alexander Hood, Esq. Surgeon, Kilmarnock.

Case I.

Ann Crea, aged nine months, was seized with a sort of convulsive disorder, about the beginning of November 1814. The warm bath, the application of leeches, and afterwards of a blister, with occasional laxatives, seemed, in a few days, to remove the complaint. In a fortnight or three weeks the disease returned, though not with the same severity as when she sustained the first attack. Calomel, rhubarb, and magnesia, &c. were given to correct the secretions, and keep the stomach and bowels in good condition; and with the view of arresting or removing any affection that might be in the brain, the head was shaven and blistered. In the course of a week the child again appeared to be nearly free from complaint, consequently my attendance was discontinued. The convulsive attacks came on suddenly, and were of such a temporary nature, that an opportunity was never afforded me of observing the appearance of the disease, the fit having always gone off before I could reach the little sufferer. The information received from the mother was, that when the child was surprised, or awoke suddenly out of sleep crying, and particularly when it cried vehemently, it became livid, was incapable of making a full inspiration, and the instinctive efforts which were made to draw in breath, were stopped and broken by convulsive struggles, reiterated at short intervals. The child was of a full habit of body, rather flabby, with a livid circle round the eyes. On the 1st of February, the evening previous to dissolution, the child was lively, and amusing itself with surrounding objects, and its whole aspect was more like good health, than what had been observed for several weeks. The mother remarked to me, at the same time, that the child always appeared to be in the best health immediately before an attack. The following morning, as the child was lying supine and

crying on its mother's knee, while she was in the act of washing the inferior extremities, the crying suddenly ceased, and on turning herself round, in order to raise up its head, she saw it expire in one of these convulsive paroxysms. Medical assistance, though procured instantly, was of no avail in restoring animation.

Dissection.—On removing a segment of the skull, the bloodvessels of the meninges were much distended, though considerable effusion had taken place from the veins, which were cut in the operation of sawing the cranium. Both hemispheres of the brain were dropsical on the surface, a quantity of serous fluid having been effused between the pia mater and tunica arachnoidea. The brain itself was soft, and in the right ventricle there might be about half an ounce of water: The vessels of the plexus choroides were loaded, but no blood was effused. The stomach and intestinal tube, in different parts, in the course of the canal, had a blanched appearance, and both seemed to be unusually small. The glands of the mesentery were swollen, but suppuration had not taken place. A small red body, about the size of a pea, was discovered on the omentum; it grew from a thin membranous part of the web, and, when it was cut open, it presented a granulated structure like the liver. In the chest, the heart, the large bloodvessels, and lungs, were in a sound state, but the thymus gland was very much enlarged, and, as it was supposed, might weigh considerably more than two ounces. On cutting into the substance of it, a quantity of thick brownish matter escaped, which resembled ill formed pus.

Case II.

James Neilson, a child aged 13 months, died suddenly, in consequence of an incident apparently trifling. He was supposed to be in good health, and his general appearance did not indicate any thing unsound in the constitution. On particular inquiry being made concerning the state of the child's health, the following facts were elicited: About four months previous to death, a tumor appeared under the left ear, which suppurated and healed up kindly. Three months may have elapsed, by the mother's report, since she one day observed, as he awoke out of a sleep, that he began to cry, the face became livid, the respiration obstructed, and the voice for a time suppressed. She conceived these symptoms to be the result of a nervous attack, and in her anxiety instantly raised him up in her arms, when the symptoms very soon disappeared. A considerable time elapsed before any recurrence of these symptoms was indicated, though, when the child cried vehemently, it was frequently at-

tended with lividity of countenance, broken and impeded respiration.

On the 11th of May 1818, after having breakfasted heartily on porridge, the child was playing on the ground, when the mother happened, inadvertently, to tread on one of its fingers, which induced a strong disposition to cry. The countenance became livid, and after one or two short convulsive efforts to make an inspiration, the legs and arms trembled, the lip quivered, and the destruction of all the functions of life seemed to be evidently impendent. He continued in this state for a minute or two and expired, the subsequent attempts to effect resuscitation having proved unsuccessful.

Dissection.—The heart appeared to be in its natural state, no blood or coagulable lymph was found in the auricles or ventricles. The foramen ovale and ductus arteriosus were completely closed. The valves also of the ventricles, pulmonary artery, and aorta, were perfect in structure and appearance. The lungs were sound, and in good condition, but the large veins in the top of the chest, and lower part of the neck, appeared to be as much distended with blood, as if a ligature had been thrown round the descending cava. The thymus gland was greatly enlarged, and might weigh between two and three ounces, and in some parts was slightly indurated. On cutting into the substance of the gland, a considerable quantity of matter, of a creamy consistence and purulent appearance, though rather more of a bluish white colour than common pus, made its escape. In the cavity of the abdomen the small intestines were distended with flatus, and had a blanched appearance. The appendicula vermiformis was unusually large, and contained feces. The stomach, liver, kidney, and bladder were all natural and healthy in structure and appearance. No disease having been suspected in the head, it was not examined.

Case III.

March 17. 1821.—Margaret Picken, aged 19 months, had a pale, squalid, bluish complexion, though, in every other respect, she was apparently in good health. When about 10 months old she was afflicted with fits or convulsions, which subsided insensibly in the course of ten days or a fortnight without the aid of medicines. The child was irritable, and when she cried vehemently, symptoms occasionally occurred which threatened suffocation. About two weeks ago these symptoms assumed an alarming aspect; on one or two occasions the functions of life were, for a short time, partially suspended. A fit of crying, or any unusual excitement, was sufficient to induce

the most alarming symptoms. She was lively and cheerful, slept well, and took her food with relish. The pulse was natural, and respiration had never been impaired. On the 12th or 13th current, the mother met me in the street, and, in applying for advice, detailed the particulars which have just been related. Being impressed with the idea, that, in this case, the alarming symptoms had their origin in a scrofulous enlargement of the thymus gland, such instructions were given, with regard to food, clothing, air, &c. as seemed most likely to improve the general condition of health, accompanied with an earnest request, that I might be informed should the child happen to be carried off suddenly. On the evening of the 15th, being in the immediate vicinity of the place where the child's parents resided, I called to see the little patient, and found her apparently free from complaint. Notwithstanding appearances, she had but an indifferent night; her rest having been broken by frequent whimperings, and slight threatenings of this formidable disease. About midday on the 16th, after having breakfasted heartily on porridge, being apparently in good health, in the act of stooping or rising from the ground, she suddenly became insensible, and expired without a struggle.

Dissection.—In the abdomen, the large and small intestines were pale, and the mesenteric glands much enlarged, but all the other viscera in this cavity were in a sound condition. The pericardium contained two or three ounces of water, the heart had rather a puckered and shrivelled appearance, and there was no blood or coagulum in the auricles or ventricles. The lungs were in a healthy condition, but the thymus gland was much enlarged, and contained purulent matter. The large veins coming from the head and superior extremities, above the point over which the gland rested, were much distended with a fluid blood. The bloodvessels of the head and of the choroid plexus in particular, were much distended. The convolutions of the brain were susceptible of being separated with the greatest facility: no morbid structure was observed, but the lateral ventricles contained a preternatural quantity of water.

Case IV.

February 26. 1821.

On the evening of the 1st instant, —— Thomson, a girl in the sixth year of her age, sustained a severe attack of disease. She was lying on the right side, and the left arm and leg were strongly agitated by a violent spasmodic affection. The countenance was much distorted, by the diseased action of the muscles on the left side of the face, incessantly dragging the angle

of the mouth towards the left ear. The previous history of her complaint is as follows: Six weeks prior to the present attack, she began to be indisposed, and left school,—she seemed to be losing flesh, and her general appearance indicated an indifferent state of health. There was cough without pain in the breast, but she occasionally complained of pain in the left hypochondriac region, frequently she complained of being weary, and went to bed, and was occasionally affected with slight vomiting. As she never complained of her head, these symptoms were attributed to the irritation of worms, and it is probable her parents were induced to embrace this view of her case, as, prior to her present ailment, she had often suffered from intestinal irritation, and frequently voided lumbrici. Worm-powders were accordingly administered, without any apparent improvement in the state of her health. About two hours before she was seized with this convulsive attack, she had taken an unusual quantity of porridge with butter-milk, a fluid for which she had had a great longing. Immediately after this repast she went to bed, and slept about an hour, but was very sick when she arose, and shortly after vomited copiously. The convulsive affection immediately succeeded the vomiting, and so violent were the spasms, that it seemed absolutely impossible to get medicines introduced into the stomach. An attempt was made to give an opiate, but without success. A suppository was then administered, but as it produced no effect on the bowels, an enema was thrown up, which being retained, failed in exciting the action of the intestines. About 10 o'clock P. M. the spasms ceased, but returned in half an hour, and continued during the night with equal frequency, though apparently less severe, most probably from the patient's diminished strength. The pulse was quick, small, and weak, the breathing difficult and laborious, the body covered with profuse perspiration, and apparently an utter insensibility to every object around her. In this state a leech was applied to the temple, by which a considerable quantity of blood was abstracted, and between five and six in the morning the spasms ceased, and the enema operated copiously. On the 2d the spasms were entirely gone, but she was left in such a state of debility, that she was unable to swallow from a moistened feather which was applied to her lips. To my great astonishment, on the 3d, when I called to receive the account of her death, I was informed that she had recovered considerably, and had eaten a sugar biscuit. Such a resuscitation I had never witnessed on any former occasion; but as the pupil of the right eye was much dilated, and the left arm and leg completely paralytic, there was still much reason to believe that the disease might ultimately prove fatal. She seemed to comprehend distinctly the import of questions which were put

to her, though her answers were limited to the monosyllables of affirmation and negation, as she readily opened and closed the right hand at my instigation, but always remained unmoved, when the same request was made with regard to the left. After shaving, a blister was applied to the right side of the head, which at first seemed to have some effect in diminishing the dilatation of the right pupil, but, notwithstanding the repetition of the blister in the course of ten days or a fortnight, both pupils were dilated. She was frequently subject to vomiting, particularly after taking food, which consisted principally of biscuit, with a little milk and water. The stomach often rejected the medicines which were administered, though it seemed to retain aloëtic pill easier than any other drug. In the progress of the complaint, and before the eyes were so much affected, she was sometimes observed to lift the left hand with her right, and to look at and examine it. About the 18th or 20th she voided two lumbrici, but as the complaint in her head now advanced rapidly, she began again to be convulsed, and on the 26th she expired.

Dissection.—On opening the abdomen, the intestines were found much distended with flatus. The stomach was unusually small, and the pylorus so much contracted, as scarcely to admit the tip of the little finger. The contracted portion might be about an inch and a half in length; the coats of the pylorus were much thickened, but not otherwise diseased. The intestines were almost empty throughout their whole course, but free from disease, with the exception mentioned, and one worm only was discovered about the commencement of the transverse arch of the colon. In the chest, the remains of the thymus gland was about the size of a walnut, and of a yellow caseous consistence. A little below the situation of this gland, the right lobe of the lung adhered pretty extensively to the pleura costalis, and in attempting to break the adhesions, about two tea spoonful of purulent matter made its escape. In the brain the ventricles were much distended with water; this distention, however, was much more conspicuous in the right than in the left ventricle. On the superior and lateral portion of the right hemisphere of the brain, a hard point was discovered in the pia mater, where it dips between the convolutions of the brain. This delicate membrane was carefully traced between the convolutions, and found to be studded over with a number of small round hard points, in some places occupying three-fourths of an inch of the membrane in breadth, dipping downwards and forwards, till it terminated between the origin and junction of the optic nerves. In the immediate vicinity of the optic nerve, on the left side, a few points of a similar kind were

discovered, which probably would have been overlooked, had it not been that the morbid condition of the membrane on the right side, led to a minute examination of the pia mater on the left. A large quantity of coagulable lymph was effused along the basis of the brain, particularly about the sella turcica and foramen magnum. In other respects, the brain exhibited nothing peculiar.

Case V.

———————— aged five years, was seized on the 4th of the month with severe headache, feverishness, and great irregularity of pulse, succeeded by delirium. The severity of the attack, and the strongly marked affection of the head, absorbed every other consideration, so that a slight pain at the top of the chest, on the right side, with some cough, prior to the present attack, had been entirely overlooked. As the headache and delirium seemed to increase, he was bled copiously from the arm, leeches were repeatedly applied to the temples, the head was shaven, and the whole scalp covered with a large blister. The blood drawn from the arm was extremely buffy, the headache abated, the delirium subsided, but the pulse continued quick and irregular. The bowels were kept easy by medicines, swimming of the head succeeded delirium, and he sunk his head between two pillows, and seemed to conceive or think himself resting on an inclined plane; he retained full possession of his faculties till within a few minutes of his death, which happened on the eighth day of the disease.

Dissection.—On removing a segment of the skull, the vessels on the surface of the brain were numerous, but not preternaturally loaded with blood. There were slight appearances of inflammation, and some effusions of water in the ventricles, besides a lymphatic effusion in the base of the brain, particularly round the commencement of the spinal marrow. In the chest, the thymus gland had a ragged ulcerated appearance, and there was a large collection of fluid with pus, and fragments of caseous matter, with coagulable lymph floating in it. The abscess extended from the top of the chest to the diaphragm, and might contain from a pint and a half to two pints English, of semipellucid matter, by which the right lobe of the lungs was greatly compressed. The pericardium contained a little water, the heart was sound, and without blood or coagulum in the auricles and ventricles. In the abdomen, the convex surface of the liver was covered with a thin layer of coagulable lymph. The gall-bladder was white, and blanched, and filled with fluid as limpid as water, and of the consistence of honey. The other

viscera of the abdomen were in a healthy condition, except that some of the mesenteric glands were very much enlarged.

Case VI.

1825.—William M'———d, a child aged six months, was born apparently in good health. His mother happened to be unusually delicate, and when only two or three weeks old, he contracted cough, which was supposed to be from cold, hard, but not recurring frequently, and accompanied with difficulty of breathing. The complaint attracted little attention, as the child was in good condition of body, though restless in the night, and sometimes apparently much pained in the bowels. After some time it was observed that breathing was always easy and free, when he slept or lay in a horizontal position, but immediately it became laborious, when placed in the sitting posture on the knee, or when carried upright in the arm. When four months old he was seized with chincough, and was feverish, and much pained for two or three weeks, with some aggravation in the difficulty of breathing. Small doses of calomel were prescribed, and given every second night, for a week or ten days, and under this treatment the child improved so much as to be considered almost free from complaint. After remaining in this improved condition about two weeks, he unfortunately caught cold, with which the chincough and difficulty of breathing recurred. The chincough was by no means severe, nor was the difficulty of breathing greatly aggravated. On the morning, however, of the 22d November, in a paroxysm of coughing, of no unusual severity, he expired.

Dissection.—On opening the chest, the heart was found empty, perfect in its organic structure, but the bloodvessels in the top of the chest were very much distended. The thymus gland was from two to three inches in length, by an inch and one-half in breadth, thin and wedge-like at the lower extremity, but thick, immediately behind the top of the sternum, and there apparently presenting considerable obstruction to the return of blood from the head. The lungs were sound, but in the abdomen the liver was unusually large, even for a child, extending to the left side behind the spleen. No other morbid appearance was observed in the cavity of the abdomen. On removing a segment of the skull, a copious effusion of water, apparently $\frac{2}{8}$ths of an inch in depth, between the tunica arachnoidea and pia mater, covered the whole surface of both hemispheres of the brain. The bloodvessels were numerous and distended, and their ramifications were seen beautifully

spread out through this pellucid fluid. The whole brain was vascular, and the ventricles contained a preternatural quantity of fluid, but by no means so much as might have been expected from an inspection of the surface.

Case VII.

April 22. 1826. ——— Pedden, a child aged nine months, enjoyed good health till the middle of February last. He had cut four teeth without much suffering, though about this time he began to be occasionally seized with fits of suppressed respiration. The fit was always short, for during the time it was on him, he never made an inspiration, but sometimes in coming on, or going off, it was accompanied with a highly croupy condition of the voice. The complaint came upon him most frequently on awakening out of sleep. Slight irritation was sufficient to induce it, and sometimes it would come on without any apparent cause. It may not be improper to mention, that the child was very much subject to hiccup, which was always removed on being applied to the breast. On the 21st current, his appearance was as much indicative of health as any one of the family, though the attacks had become very frequent. With some notion of benefiting his health, his father had made him a little coach, in which he was placed with a strap round his waist, to prevent him from falling. As a first trial of the vehicle, one of the family began to give him a few turns in it round the room, when he was unfortunately seized with one of these attacks, and expired instantly.

Dissection.—In the chest the lungs were sound, the pericardium might contain a table spoonful of fluid, the heart was without blood or coagulum, and had somewhat of a puckered appearance, but had sustained no morbid change in its valvular apparatus. The thymus gland was very large, and when cut into and pressed, a puriform fluid escaped in small quantity. There was also a glandular substance, much injected with blood, about the size of a scarlet-bean, besides two or three of lesser size, found near the bifurcation of the trachea; and the trachea itself contained a considerable quantity of mucus. The veins in the neck and top of the chest were much distended with blood. The mesenteric glands were enlarged, and when cut and pressed, a small quantity of puriform fluid escaped, similar to what had been observed in the thymus gland. The brain was very vascular; on the surface there was a slight effusion, and two or three drachms of water were found in one of the ventricles. Such were the appearances on dissection.

Case VIII.

April 15. 1825.—Mrs W., aged 58 years, began to complain, upwards of twelve months ago, of an uneasy sensation, and some degree of pain, immediately behind the top of the sternum. The pain, or rather uneasy sensation behind the sternum, was not so severe as to prevent her from attending with her usual activity to the domestic concerns of the family. At an early stage in the complaint, a cough imperceptibly arose, which, during the three last months of her life, was frequent and severe, and had all the characters, in point of sound, of most severe croup, with some difficulty in respiration. Being called to visit her on the 3d instant, she was found occupied with the affairs of the family. She was thin, and had lost strength, tongue clean, pulse natural, and the bowels regular; but the attention was most forcibly arrested by the croupy nature of the cough. Being strongly impressed with the idea, that the peculiar nature of the cough could not be produced by croup in its genuine form, it was supposed there must be some tumour pressing upon the trachea near its bifurcation, or that some tumour or excrescence grew from the internal coat of the windpipe in that situation. With this view of the case, two leeches were applied over the site of the pain, and the part, shortly after, was to have been covered with a blister. In addition to this local treatment, a mild mercurial was to have been administered twice a-week. This mode of treatment was adopted more with the view of alleviating the complaint, than from any hope which was entertained of curing the disease. During the application of the leeches, the cough was suspended, and she experienced temporary relief; but scarcely had they dropt off, when all the symptoms recurred with tenfold violence. She was now confined to a sitting posture, inclining forwards, with her arms and head supported by pillows, or such of her family as might be in attendance. The veins of the head were full, distended, and elastic to the touch, like those on the arm, after it is bound up for venesection; and the obstruction to respiration was so great, that she could seldom make an inspiration sufficient to enable her to cough. Deglutition was also obstructed, and great uneasiness was produced by every attempt which was made to swallow food or drink. In this condition, she remained about eight days, almost without tasting nourishment of any kind; and in this state of exhaustion, she expressed a desire for some watergruel, of which she swallowed several mouthfuls with avidity; and suddenly expired, without a struggle, on the 13th of the month.

Dissection.—In the chest, the lungs were sound, but some-

what distended with air; and a superabundance of carbonized mucus seemed to fill the air cells. The pericardium contained a little water, tinged slightly yellow. The heart was about the natural size, fatty, soft, with the muscular fibre unusually dark coloured, and seemingly possessing little cohesion; but in other respects, it was sound in its organic structure. The arch of the aorta was aneurismal, and the original lesion of the artery appeared to have been in the posterior part of the vessel: the tumour projecting principally in that direction, pressed on the bifurcation of the windpipe. At this point, the disorganization of the arterial coats had made such progress, that the cartilaginous rings of the trachea, after the coagulated blood was removed, were quite perceptible to the sight and touch, and seemed to form the posterior wall of the aneurismal sac. There was much infarction of the cellular substance between the tumour and descending cava, which appeared to present great obstruction to the return of the blood from the head and superior extremities. Such were the appearances in the chest; and it was not deemed necessary to examine the head.

Case IX.

David Allison, weaver, aged 60, had hitherto enjoyed good health, till some cause of merriment in the workshop strongly excited risibility in him and his companions. After the cause of their mirth had ceased, still he continued to laugh. It was soon observed, that the laughing which had been induced by a natural incitement had become involuntary; so the poor man continued convulsed in this manner, till he fell upon the ground in a fit of epilepsy. This happened about the beginning of November 1824. For several weeks he had frequent returns of epileptic fits, to which succeeded a kind of mania. The derangement continued six weeks or two months, and gradually subsided, when he was seized with asthma so severe, that it was little susceptible of alleviation by the curative means which were employed. For some months prior to dissolution, his mind was apparently sane, though enfeebled; and he sunk gradually till the 6th of April 1825, when he died.

Dissection.—On opening the head, the vessels on the dura mater were numerous, and somewhat distended with blood. There was some effusion of water on the surface of the brain, between the tunica arachnoidea and pia mater. The ventricles contained a considerable quantity of water, and the plexus choroides was vascular, and loaded with an earthy, or rather osseous deposition. There was also a circular piece of bone found in the plexus of the right side, thin and somewhat less in

diameter than the scale of a herring. In opening the chest, it would seem that there had been a tendency to ossification over the whole system, as the cartilaginous extremities of the ribs could not be divided in the usual way, but required the action of the saw. On raising the sternum, a white hard tumour of great magnitude was observed lying to the right of the base of the heart. The veins on the top of the chest were much distended with blood; and when the descending cava was cut open, the tumour was found to embrace the whole trunk of the vessel, and had greatly diminished its diameter. About half an inch, or an inch above where the vein enters the auricle, a substance of a white cauliflower appearance, an inch in length, and two-thirds of an inch in breadth, projected more than one fourth of an inch into the cavity of the vein. The tumour might be about a pound and a half or two pounds in weight, and extended across the chest to the left side behind the aorta, and involved the trunk of the pulmonary veins. The tumour was very firm in consistence; and, when cut open, a cream coloured fluid could be pressed out of it; but the fluid did not appear to be contained in any particular sac. In one or two points in which the tumour was cut, several dark blue substances were observed clustered together, about the size of field pease. The heart was sound in every respect, and perfect in its valvular apparatus. In the cavity of the abdomen, no diseased appearances were detected.

Observations.

In entering upon a review of the cases which have just been detailed, it will be observed, that a general feature pervades the whole, modified by the particular circumstances of each individual case. The subjects were nine in all, seven children and two adults. In all the seven children, the thymus gland seemed to be the primary seat of disease. In four of the cases, it was very much enlarged; in one it was caseous, in another ulcerated, and in a third it appeared to have been entirely destroyed by a process of ulceration. In the aneurismal patient, the croupy cough, the insupportable dyspnea, the swelling of the veins in the neck and arms, evince with how much difficulty the blood was transmitted through the circulating system. The large tumour in Allison's case, which embraced the descending cava, narrowed its diameter, and produced asthma and effusion of water on the surface of the brain, seems to warrant, though in many respects dissimilar, the grouping of these cases together. The effusion of water on the surface of the brain, and in the ventricles, in the majority of the cases in which this viscus was examined, appeared evidently to be the consequence of some ob-

struction to the return of the blood by the veins from the head, rather than the effect of inflammation in the brain itself, or its membranes. In two of the cases, viz. IV. and V., in which appearances indicated the presence of inflammation of the brain and its meninges, the affection was sympathetic; in the one case with abscess of the chest proceeding from ulceration of the thymus gland, in the other with a caseous state of the gland, a small abscess in the lungs, and much derangement in the digestive organs.

But the pathology of the thymus gland is little understood; and in as much as some of these cases possess a high degree of interest, from the light which they seem to throw on some of the obscure causes of sudden death in children, and on the train of symptoms which characterize morbid enlargements of this gland, it will be proper to consider the whole subject somewhat in detail. The gland which, in the majority of these cases, appears to have been the primary seat of disease, is large in the fetus, diminishes in infancy, shrinks in adolescence, and disappears in the adult state. It is found often to contain fluid, but no excretory duct has been discovered; and the particular purposes which it serves in the economy of the fetus and child, are not well understood. In a recent dissection, this gland was found to be enlarged, as were also some of the glands in the mesentery. Incisions were made in its substance in several places, but no fluid or matter was apparent. The organic structure was entire; but when the incised edges were pressed, a cream-coloured fluid oozed from innumerable points. On subjecting the mesenteric glands to the same treatment, the same phenomena were observed. But though both glands were enlarged, there was no apparent lesion of structure in either; the one in the mesentery was enlarged by the scrofulous affection, and so it is presumed was the other; hence the formation of the cream-coloured fluid in both ought probably to be considered as the effect of disease. "The thymus gland," observes Dr Baillie, in his Morbid Anatomy, "is subject to few diseases, and is only of temporary existence; few instances, therefore, of morbid structure have been observed in it. It would seem to be very little disposed to common inflammation, therefore abscesses have occurred in it very rarely, and have been little noticed by authors. It is more liable to be enlarged in its size, and to become hard in its texture. It once occurred to myself to observe an instance of this sort, but I had no opportunity of examining it very minutely." Though this intelligent author has certainly failed here in pointing out the symptoms which characterize enlargement of this gland, when the enlargement constitutes disease, such as occurs in the cases under consideration, still his Morbid Anatomy must be considered as an invaluable ad-

dition to medical science; and the memory of that amiable and highly gifted individual will ever be held in the highest estimation by the profession. Dr Burns, who has been many years known to the public by his valuable writings, and has devoted much of his time to the investigation of the diseases of children, takes notice of enlargement of this gland. Under the head of Tabes Mesenterica, he observes, in a note, that "this state is sometimes accompanied with swelling in the thymus gland, and the lymphatic glands of the neck. The swelling of the thymus gland, by pressing on the trachea and esophagus, produces difficulty of breathing and of swallowing, and sometimes suffocation. By pressing on the subclavian vein, it obstructs the passage of the chyle, and may thus excite disease in the mesenteric glands." This hurried glance at the effects arising from diseased enlargement of this gland, is not quite satisfactory. There is an averment, indeed, that certain natural functions are impaired by a swelling of the gland; but no train of symptoms is given, from which it is possible to infer with precision, that the functional derangement exists as a consequence of morbid enlargement of the gland. Suffocation and difficulty of breathing and swallowing, are certain indications of disease; but the facts are wanting which might establish the connection between these symptoms and the swelling of the gland; and which ought to prove that the existence of the former was merely a consequence of the condition of the latter, and not the result of any organic affection in the trachea and esophagus themselves. An examination or inspection of the parts in a patient during life gives no information concerning the state of the thymus gland; and this may, or rather does, render it impossible to detect any deviation from the healthy condition till after death. But, by carefully noting the symptoms of disease during life, and by a patient examination of the body after death, information may be gained which will often enable us to detect the seat of disease, and to trace the connection which subsists between the symptoms and disorganizing process, which is going on in the living system. Being thus instructed, when a child is found to have been affected with a series of attacks, and train of symptoms, as in the cases of Ann Crea, Margaret Picken and Pedden, there seems to be little difficulty in prognosticating with much certainty respecting the cause of the disease. The sudden death of a child which has been preceded by no morbid indication of ill health, but arising immediately from surprise or violent irritation, accompanied with great efforts to cry, without being able to raise the voice, as in James Neilson's case, may, in general, be attributed to an enlargement of this gland. In the sixth case, the child had been indisposed with chincough for six or seven weeks; the complaint was in a very mild form, and his sudden

death was quite unexpected. The difficulty of breathing in the erect posture, the perfect freedom and ease with which respiration was carried on in the horizontal position, did not, during life, seem to admit of a very satisfactory explanation. But the rapid improvement in the child's health during the alterative course, was most probably affected by the operation of the medicine on the hepatic and glandular system, in addition to the effects which were produced upon the stomach and bowels merely as a laxative. It can scarce be doubted, at this stage of the complaint, that effusion had taken place on the surface of the brain and in the ventricles, though no symptoms of hydrocephalus were ever indicated. But the cold, and the recurrence of hooping cough, seems to have re-established the diseased action in the enlarged liver, and thymus gland, which, by their bulk and mechanical obstruction to the return of the blood from the head, would necessarily promote further effusion on the surface, and in the ventricles of the brain. It seems too frequently to have been the practice with medical men of considerable celebrity, upon examining the body in cases of this kind after death, on discovering an abundant effusion of water within the cranium, to attribute the sudden death to hydrocephalus. This appears, however, to be a very erroneous conclusion, for the enlarged liver and thymus gland were evidently the organs primarily affected, and the presence of water in the head would seem to have arisen from venous exudation, in consequence of the obstruction presented to the transmission of the blood through the large veins coming from the superior extremities. Water within the cranium is, in every instance, the consequence of disease, but in idiopathic hydrocephalus, the seat of the affection is in the brain and its membranes, whereas, in the case under consideration, it was the effect of enlargement of the liver and thymus gland.

There is another modification of disease which seems to arise from enlargement of the thymus gland, sometimes observed in children. After they have suffered long from teething, or have been reduced by other debilitating causes, they are unexpectedly seized with repeated attacks of a kind of croupy spasmodic breathing. A case of this kind occurred some years ago, in my own family, in a boy eighteen months old. He had suffered much from teething, was greatly debilitated, could scarce stand on his legs, was pale, and had considerable enlargement of the submaxillary glands, when he began to be afflicted frequently in the course of the day with spasmodic breathing, characterised by a croupy sound in the voice during the attack. The attacks were induced, in general, by taking a drink of water, or any other fluid, though frequently they came on without any obvious cause, and went off in less than a minute. It was a mild

form of the disease; yet, during the attack, there was a slight lividity of the countenance; the eyes were fixed and staring; the shoulders and chest heaved by the powerful action of the muscles concerned in respiration. With each inspiration the angles of the mouth and lower jaw were depressed, the skin on the forehead was raised, and the head thrown slightly backwards. He laboured under this complaint for a week or ten days without any medicine having been administered, except such as might be necessary to keep the stomach and bowels regular. In reflecting on the nature of the case, it occurred to me that the disease proceeded from general debility and a scrofulous enlargement of the thymus gland, mechanically inducing spasm, in the efforts which were made in swallowing fluids, and from other slight causes, less cognizable by the senses. It happened to be the spring of the year; he was removed to the sea-side, where he rapidly recovered, he having sustained only one attack of the complaint after having been sent thither. Several cases of this kind have fallen under my observation; the treatment has consisted in keeping the stomach and bowels regular and in good condition, as much as possible, by tonic medicines, occasionally a mild alterative, nourishing diet, comfortable clothing, pure dry air, and particularly sea air, when the season will permit.

It may here be remarked, that morbid affections of this gland seem to be characterized by symptoms varying with the condition and circumstances of the patient in which they occur; and that no individual case presents to our view all the different symptoms which are to be observed in attending upon a variety of cases. It sometimes happens that this gland becomes enlarged without the health or general appearance of the body seeming to suffer in any perceptible degree. The fact is only ascertained by the child being carried off in a fit (as the phrase is), or recovering after life has been for some little time suspended. In such cases, the attack is in general brought on by surprise, or some sudden irritation, inducing strong efforts to cry, without being able to raise the voice, as in James Neilson's case. When a child has recovered from a fit of this kind, the parents should be admonished carefully to avoid the incidents which induce it: and in the event of a return of the complaint, instructed to bring the child instantly to the open air; keep the body nearly erect, and bring the head somewhat forward, in order to favour the descent of the blood from the head, and not allow it to lie on the arm, as is sometimes done. A grain of calomel may here be administered twice or thrice in the week, with small doses of rhubarb, as the state of the stomach and bowels may seem to require; but nothing I apprehend will be found so generally beneficial as warm clothing, nourishing food, pure dry

air, and especially going to the seaside when the season is favourable.

To morbid enlargements of this gland my attention has often been forcibly directed since 1814; and it appears to me that the circumstances in which the affection originated, are such as induce a scrofulous condition of the lymphatic system in young subjects. From the local situation of this gland between the layers of the anterior mediastinum behind the top of the sternum, any considerable enlargement of it is peculiarly dangerous, not only from the pressure which the trachea, esophagus, and subclavian vein may sustain, as mentioned by Dr Burns, but more especially from the obstruction presented by it to the return of the blood from the head to the heart by the large veins.

Dr Underwood, in his Treatise on the Diseases of Children, under the head of Inward Fits, seems to give an indistinct account of the complaint; and ascribes the deaths which happen from it, to over-feeding, spasm of the stomach, heart, lungs, or to hydrocephalus. It is characterized by him thus:

"Besides a little blueness of the lips, and slight turning up of the eyes, often noticed by nurses, this complaint is described as attended with a peculiar sound of the voice, (somewhat like croup), and very quick breathing at intervals; and is supposed to arise from spasm of the stomach, lungs, or other vital organ. These symptoms are said frequently to attack the child in its sleep; and in the commencement will go off,—upon taking it up from the cradle. They are likewise observed to be induced by sucking or feeding, and to be increased upon any little exertion of the body or transient surprise."

On comparing this account of the complaint with the history of Ann Crea's case, there are many points of striking similarity. The water, too, which was discovered by dissection, on the surface of the brain, and in the ventricles, would probably have induced Dr Underwood to believe that she died of hydrocephalus. It may certainly be allowed, that an accumulation of water on the surface of the brain, and in the ventricles, though not existing there as a primary disease, may form a disposition in the system to spasm, or apoplexy, from the space mechanically occupied by it, thereby diminishing the natural capacity appropriated to the reaction of this viscus, when casual obstructions are presented to the reflux of the blood from the head. When, by reason of its local situation and pressure on the veins in the top of the chest, the enlarged thymus gland has induced a dropsical condition of the brain; it is easy to conceive the manner in which slight surprise, bodily exertion, or sudden excitement to cry, may, according to circumstances, bring on comparatively slight transient attacks, or the more alarming and fatal casualties

of the disease. In adults, again, where this gland has disappeared, diseases are sometimes met with in the chest, which affect respiration in an appalling manner, by the obstruction which they present to the return of the blood from the superior extremities, as in the 8th and 9th cases. In the 8th case the dissection afforded the most satisfactory explanation of the phenomena of disease: the gradual enlargement of the aneurismal tumour on the arch of the aorta by pressing on the trachea, excited at first slight difficulty of breathing, and a croupy sound of the voice, with which the cough was accompanied. The rapid increase of the complaint during the last stage of its progress, produced the most distressing dyspnea, difficult deglutition, and the greatest possible distention of the veins in the superior extremities. Impelled by hunger or thirst, the avidity with which she swallowed the water-gruel, by the mechanical dilatation and contraction of the esophagus, seemed to have produced such additional disorganization in the tumour, or parts immediately depending upon it, as to render them totally incompatible with functions of life. In Case IX. the man had enjoyed uninterrupted good health, and was not conscious of labouring under any disease up to the moment he began to laugh with his companions. But, laughing is a natural expression of feeling, in which a series of short convulsive expirations presents some impediment to the return of the blood from the head. Trifling, however, as the obstruction may be in general, yet, in the case before us, it was sufficient to convert certain natural and voluntary motions or actions, into protracted involuntary actions, so that the poor man continued laughing after the object of his mirth had passed away, till the pressure or irritation on the brain became so great, that he dropt down in a fit of epilepsy. This paroxysm of laughing, which became involuntary, and terminated in the manner now mentioned, was the first manifestation of disease, at which time the tumour embracing the descending cava was most probably small, compared with what it was found to be on the inspection of the body five months afterwards. Here it seems reasonable to suppose, that the repeated attacks of epilepsy which he had, were occasioned by the tumour in the chest; and that, during these epileptic attacks again, the accumulation of blood in the head so disturbed the balance of circulation between the veins and arteries, as to induce chronic inflammation in the extremities of the latter, or in the substance of the brain itself, giving rise to mania, which was subsequently relieved by lymphatic effusion. The *ratio symptomatum* here supposed, seems to be supported by what is observed in the phenomena of idiopathic hydrocephalus, in which, after the most acute phrenitis, and violent delirium, have subsisted several days, the patient becomes comparatively tranquil,

his faculties are restored, notwithstanding that effusion has taken place, and may be presumed to be going on rapidly, as the last stage of complaint, and dissolution are evidently approaching. It seems scarce reasonable to suppose, that the complaint originated in the head, though a small scale of bone was found in the plexus of the right ventricle, as there was a tendency to ossification in other parts of the system. There can be no doubt, that the severe asthma with which he was afflicted two or three months prior to death, and which admitted of little or no alleviation, was occasioned by the tumour in the chest obstructing the transmission of blood through the descending cava, pressing upon the trachea, and otherwise impeding the action of the heart and lungs. The leading features of this case afford a striking illustration of the manner in which spasmodic breathing may sometimes be induced, by slight obstruction to the return of the blood from the head. But weeping or crying, as in laughing, is also expressed by repeated broken convulsive expirations, in which much obstruction is presented to the return of the blood from the head; hence it is easy to perceive how the pressure of the enlarged thymus gland in children may incidentally induce spasmodic respiration, and by becoming permanent, give rise to the more alarming consequences of the disease, viz. effusion of water in the ventricles, on the surface of the brain, and sudden death.

In Case V. the boy was somewhat advanced, small abscesses seem to have been formed in the thymus gland, and subsequently to have burst,—the matter finding vent between the pleura costalis and pleura pulmonalis. The process of ulceration and effusion would seem to have been going on silently while he coughed, and complained of slight pain on the top of the chest on the right side. But the smart fever and hydrocephalick symptoms with which it was accompanied were undoubtedly secondary, and produced by sympathy with the disease in the chest, which had commenced in the abscess and ulceration of the gland. The active measures which were employed to arrest the progress of the disease most probably precipitated the second stage, when effusion commenced. Here the delirium subsided, though the disease went on; and he retained his faculties almost entire till within a few minutes of his death. The same cause, viz. abscess and ulceration of this gland, is attended by consequences widely different in different constitutions. I was lately present with a medical friend at the inspection of the body of a boy who had died rather suddenly, under symptoms somewhat obscure. He was about three years old, and while teething, at the age of eight months, had two convulsive attacks, which were but of very short duration. Some five or six days previous to the attack of the complaint of which he died, he had been troubled with considerable cough,

without any other symptom of disease. He was seized suddenly with smart fever, pulse 120, tongue furred, much oppression of breathing, and pain in the course of the sternum. The application of leeches to the top of the chest, and afterwards near the region of the stomach, with the other curative measures employed in the course of the first week, removed the pain; the pulse fell to 80, and the symptoms of fever subsided, though he continued to be restless, and his breathing very much oppressed. He was thought to be convalescent, as there was no fever or other symptom which occasioned uneasiness, but the incessant restlessness and oppression of breathing. He had taken little food; and when he ate he took only a few mouthfuls with avidity, but drank plentifully of butter milk. Although he was weak he wished to get to the ground, and desired to be taken out to the open air, only a few minutes before he expired, in the act of making some little exertion, on the fifteenth or sixteenth day from the commencement of the disease. As he never complained of his head it was not examined. The pericardium contained a little water, the place of the thymus gland (for it had disappeared) in the anterior mediastinum, seemed to have been the seat of an abscess, that had burst, or found vent, between the pleura costalis and pleura pulmonalis. The quantity of purulent matter might be from four to six pints English. The lung on the right side was so much compressed, puckered and corrugated, that it might almost have been squeezed into a snuff box. The left lung was sound, and no other morbid appearance was discovered worthy of notice. In children about this age the gland is still of considerable size, and, inasmuch as in this case it had entirely disappeared, and nothing but rugged cellular substance remained, it is presumed that the origo mali had commenced with abscess and ulceration of this gland, or some small lymphatic gland, in this situation, less known to the profession.

The lengthened details of Case IV. do not require to be very particularly noticed here: For, though many morbid appearances were discovered, yet these appearances have little bearing upon the principal points which are meant to be established by the history of these cases. Two points, however, do receive confirmation from it, viz. the existence of disease in the thymus gland; from its having been found in a caseous state, and the superinduction of water, in the head from the previous existence of disease in the chest and abdominal viscera. Whether the indisposition and cough with which she was first affected arose from the diseased condition of the gland, or from the tendency to the formation of abscess in the right lobe of the lungs, are points which cannot be satisfactorily explained. The morbid changes in both these places may have been induced by

intestinal irritation, and impaired function in the chylopoietic viscera; and if it be allowable to suppose the contraction of the pylorus to have existed at the time she supped so heartily on porridge, a combination of circumstances is exhibited, which seem to afford an explanation of the subsequent phenomena of the disease. Dr Underwood seems much disposed to attribute the cause of sudden death in children to overfeeding; and in the case immediately before us, his opinion seems to obtain some countenance. Nielson and Picken (Case II. and III.) had also breakfasted heartily on porridge, previous to the attack of which they died. But the patients in the first, sixth and seventh cases, had not been regaled with the same wholesome fare; yet their deaths were equally sudden and unexpected. A full meal may, no doubt, obstruct the descent of the diaphragm, and impede free respiration, and co-operate with other morbid conditions of the system, in producing fatal consequences. But, in the cases just noticed, permanent derangements were discovered on dissection, sufficient to account for their sudden death, without the supposititious cause of over-feeding. If children be allowed the breast or wholesome food, as often as the nature of their constitution may require it, little danger is to be apprehended from over-feeding. But nurses often, and sometimes even medical men, very absurdly wish to controul and restrict children to stated periods of taking food and drink; but why, it may be asked, should the convenience of a nurse, or the caprice of a practitioner, be regarded, when the indications of nature or of appetite convey as unequivocally, as language can express, the wants of the infant? In fixing upon stated periods for giving children their food, without any data from nature, they are often made to feel more severely than they ought, the craving sensation of hunger; and hence, impelled by their feelings, they may occasionally take more than the stomach can conveniently digest. To this subject my attention has often been directed, yet I have never discovered that children have injured themselves, or taken more than enough, when their wants were duly supplied with wholesome food, as often as the solicitations of appetite required it. The error seems chiefly to consist in a desire prematurely to induce the habits of age, with respect to diet, upon children; while growth of their bodies, on the contrary, requires frequent and abundant supplies of nourishment. But it must not be inferred from what has been said, that a system of cramming or pampering with comfits, &c. is to be adopted; for such practices are equally reprehensible with those which have called forth these animadversions.

The pathology of the thymus gland being the principal object of this paper, Cases VIII. and IX., however interesting in themselves, have only been introduced, in order to illustrate

certain views, which have been given in the *ratio symptomatum* of morbid enlargements of this gland. The history and dissection of the seven cases present us with three different states of the disease, viz. scrofulous enlargement, scrofulous ulceration, and a caseous condition of the gland. Upon considering the three different states of disease presented by this organ, it will readily be admitted, that they all belong to the same primary affection, modified somewhat, perhaps, by the temporary nature of the gland, and the age of the patient. The caseous condition of the gland occurred in a girl comparatively advanced, for she had attained the sixth year of her age; and, it seems probable, that this kind of morbid appearance will most generally be found in children about this time of life. This girl, whose case is given as an example of the disease, was indisposed, and had cough without pain in the breast, notwithstanding that a small abscess was discovered on the upper part of the right lobe of the lungs. But intestinal irritation and derangement of the disgestive organs sometimes occasion cough, though it is more than probable, in this case, that it proceeded from the formation of an abscess in the lungs; hence, in the present state of our knowledge, no symptoms can be pointed out by which this state of the gland can be ascertained during life, and the matter is, perhaps, the less to be regretted, as it would still have remained equally beyond the reach of medicine.

In scrofulous ulcerations, the symptoms by which this state of disease is characterized, are attended with considerable obscurity. The age at which it seems to take place, appears to be between the third and fifth year. There is slight pain or uneasiness about the top of the chest for several days, accompanied with cough, but these symptoms seldom appear to be so severe as to require medical aid. Soon, however, the system becomes much deranged, and a formidable attack of disease succeeds. The head may become sympathetically affected; then hydrocephalic symptoms engross the attention of the practitioner. At other times, intestinal irritation constitutes the principal feature in the disease, and the heart and lungs are impeded in their functions, by the confinement of the matter between the layers of the mediastinum, or bursting and diffusing itself over the surface of the lung between the pleura costalis and pleura pulmonalis. Death in these cases will in general be sudden, and attended with obscurity. The symptoms which have just been enumerated, as characteristic of abscess and ulceration, originating on the thymus gland, must be considered merely as hints which may be subservient in making future observations on this subject.

But scrofulous enlargement of this gland during life, may, with great precision, be inferred to exist from a variety of dis-

tinctly marked features of disease. The first variety or modification of the complaint, which will here be noticed, is that in which this gland seems to have become enlarged, without any obvious cause, and where the child apparently continues to enjoy perfect health. While matters are in this state, the family surgeon is sometimes consulted by parents concerning certain alarming appearances which have happened from some trifling cause, to one or other of their children. Most frequently, slight injury or sudden surprise, is assigned as the cause of inducing upon the child a strong effort to cry, without being able to raise the voice, during which the face becomes livid, respiration is suspended, and strong convulsive struggles seem about to terminate its existence. If now, by a favourable position of the body, or an expiring effort of nature, the child be able to make an inspiration, the functions of life are soon restored, and in a short time it recovers its wonted health and spirits. An attack of this kind is attended with the utmost danger, as may be learned from James Nielson's case; yet, by adopting means for promoting general health, the child may never have a return of the complaint. The experienced practitioner can have no difficulty in distinguishing an attack of this kind from lividity and other symptoms, originating from diseased heart. In the second form of the complaint, the child still retains its usual plumpness of body, but the flesh is soft and flabby, the countenance somewhat pale, and, on crying, quickly becomes considerably pale and livid. On awakening out of sleep, and beginning to cry, the child seems incapable of making an inspiration, the face becomes livid, and there is much appearance of an alarming attack of convulsions; but, in general, all these symptoms suddenly disappear, on taking the child up in the arms. The same kind of fits may be brought on by walking, dressing, feeding, &c., or by any species of incident which may happen to excite or irritate the little patient. At first the attacks may be seldom, as once a month, three weeks, or a fortnight, but when they recur frequently, it is evident that the disease is making alarming progress. Yet it often happens, that the child may seem to recover for several weeks, by a general improvement in health and appearance, and being entirely free from these attacks, so that when parents and practitioners are beginning to congratulate themselves on having obtained a cure, the patient suddenly expires in a paroxysm of the disease. On dissection, the veins of the meninges are loaded with blood, and more or less of edema on the surface of the brain, and there is effusion of water into the ventricles. The veins on the top of the chest are very much distended by the pressure of the enlarged gland, and the heart is void of blood or coagulum. In some it will be apt to occasion surprise, that so much water

should be found on the surface of the brain, and in the ventricles, where no previous symptoms of hydrocephalus had been observed. This phenomenon, however, may be easily explained, by the continued pressure on the veins in the bottom of the neck, impairing the functions of their extremities in the meninges on the surface, and in the ventricles. In this way, a dropsical condition of this organ may take place, and often actually occurs, without the functions of the brain being materially disturbed, or without being preceded or accompanied with the usual symptoms of hydrocephalus. Thus, the enlarged gland seems to produce dropsy of the brain, in the same way that enlarged liver or the gravid uterus produces dropsy in the lower extremities, only with this seeming peculiarity, that in dropsy of the brain, there is apparently an increased susceptibility to spasm: In cases of this kind, where the water is accumulated by venous exudation, there is a well marked broad line of distinction, from cases which exhibit similar appearances on dissection, but where they have originated from idiopathick or sympathetick hydrocephalus, which proceeds from inflammation in the extremities of the arteries, in the meninges, or brain itself. Should a patient labouring under the symptoms of acute hydrocephalus, happen to be cut off by spasm or otherwise, the brain may be examined, without any water being discovered. On the contrary, if a young patient happen to die in a fit or spasm, as in the majority of the cases which have been detailed, without having been previously affected with symptoms of water in the head; and if, on dissection, water is discovered in the ventricles and on the surface of the brain, the patient is rashly concluded to have died of hydrocephalus: Whereas the immediate cause of death ought to be attributed to obstructed circulation.

Thus, I apprehend, may be explained, on rational principles, a great many cases of sudden death, which, by Dr Underwood, in the chapter on Inward Fits, are ascribed to over-feeding, spasm of the stomach, lungs, and heart, and water in the head.

In other cases of scrofulous enlargement of this gland, the disease is characterized by symptoms very peculiar, though in the main feature corresponding accurately with the various phenomena of the complaints which have been already described. The sound of the voice here is the chief and striking peculiarity which precedes and succeeds the spasmodic attack. It seems to have little in common with the genuine forms of croup, except in the croupy sound of the voice; but this sound is only heard in mild cases during the fit, which seldom lasts more than half a minute. An illustration of this form of the disease has already been given at considerable length, as it appeared in a child of my own family. In the more severe forms

of this complaint, again, as where it occurred in the child Pedden, the croupy sound of the voice was heard only when the attack came on or went off, for, during the fit, in him respiration was entirely suspended. When he was first seized with this complaint, in February, the attack came upon him on awakening out of sleep, or from slight irritation, and, in April, though he had suffered nothing in personal appearance, yet the attacks had become very frequent, and the slightest incident was sufficient to excite a paroxysm, in one of which he died on the 21st of the month, as described in the history of his case. The cases which have just been alluded to, may be considered as good examples of the mild and severe forms of the disease, for it seems often to be modified by derangement of the stomach or intestinal irritation; but more especially from nervous irritation, arising from difficult and painful dentition.

In volume first of the fifth edition of Dr Underwood's Treatise on the Diseases of Children, at page 48., the complaint is treated under the designation of Chronic Croup. "It was not till after some time," he observes, "that I could form any precise opinion of this complaint, not having met with it during many years' close attention to the diseases of children. At length, however, instances occurred with all the precise marks of the complaint, as I noted in a former edition, and accordingly offered my opinion with a becoming diffidence; some cases being at that time pending. But, during the last three years, I have been further acquainted with this extraordinary spasm, and have succeeded in removing it in every instance, by treating it, as I before hinted, as a chronical croup, by administering different antispasmodics; assafetida, ol. ricini, tinct. fulig., musk or cicuta, being prescribed, as particular circumstances have indicated; and so far from its generally proving fatal, I have not been able to learn, by the most diligent inquiries, that any child so affected, excepting one *, has been carried off suddenly, or by any thing resembling this complaint."

The following Note is here added by the Doctor:

* "This infant had very severe and repeated convulsive fits, for several days together, with the croup, and was suspected to have water in the head. It appeared, however, to be at length perfectly recovered, so that Dr Reynolds (who attended with me) and I had taken leave for about a fortnight. The fits then returned, but were so slight, that the apothecary was only sent to; but in one, the most slight of any, the infant almost instantly expired, very much in the manner described by the gentleman above alluded to: But as infants not unfrequently die suddenly of hydrocephalus, and as that or some other morbid affection of the brain had been suspected, and the infant was not opened, the conclusion on either side is incomplete.

"Should it be objected, that, although this child had several true convulsion fits, at the same time that it was affected with the crouping noise, and that these had returned after the croup had given way; yet it certainly died

"Since the last edition, I have seen chronical croup more frequently in children of various ages, and indiscriminately in those nourished by the spoon or the breast, I have known it attended with severe and repeated epileptic fits (and then the bowels have usually been costive, or the stools very clayey), but in every instance the crouping has yielded, and (with the exception above mentioned) children have continued well, treated all of them as for the chronical croup, which I still think to be the real complaint."

It seems quite evident, that this practical writer is treating of a disease which has rarely fallen under his observation, particularly in its more aggravated form, otherwise he could never have spoken so confidently with regard to the success of his treatment, or misapprehended, as he evidently does, the spasm and croupy sound of the voice, which originates in pressure on the trachea, from scrofulous enlargement of the thymus gland, or the enlarged bronchial glands, situated over the bifurcation of the windpipe, with the sequelae of idiopathic croup. This affection has been denominated by some practitioners, Chronic or Spasmodic Croup, and is noticed by Dr Clarke in his Commentaries on the Diseases of Children, where he states, that "it consists in a peculiar mode of inspiration, which is difficult accurately to describe. The child having had no apparent warning, is suddenly seized with a spasmodic inspiration, consisting of distinct attempts to fill the chest, between each of which a squeaking noise is often made: the eyes stare, and the child is evidently in great distress; the face and the extremities, if the paroyxsm continues long, become purple, the head is thrown backward, and the spine is often bent, as in opisthotonos: at length a strong expiration takes place, a fit of crying generally succeeds, and the child, evidently much exhausted, often falls asleep." The gentleman who reviews these Commentaries, in the Edinburgh Medical and Surgical Journal for January 1816, observes, that "these paroxysms occur several times in the day, from the slightest irritation, and often immediately on waking from tranquil sleep, and may go on for two or three months, if not properly treated, until a general convulsion produces alarm. This complaint seldom occurs after the third year, or in children who have lived by suckling, till they have got teeth. This

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in the sudden manner that infants are said to do, of what has been termed Infant Fits; and, therefore, neither this child, nor others who recovered under the treatment described, had a disorder that ought to be termed spasmodic croup, but were all ill of inward fits, although only one of them died as such infants usually do. Should the whole or any part of this reasoning be granted (which, in my opinion, it ought not), yet is the term inward fits equally improper, and nowise descriptive of so singular a disease as is intended by it, and can only lead to an indeterminate use of a term calculated rather to obscure a dangerous disease than to lead to any good practical use."

and all other convulsive diseases, the author ascribes to some actual disease in the brain, and he takes some pains to shew how this affection may be produced, directly and indirectly, from over-feeding, keeping the head hot, the sudden cure of ophthalmia, and of discharging eruptions, the occurrence of fevers," &c.

In the Medico-Chirurgical Review for April 1826, a compendious view of a valuable paper on the subject of croup in general, read by Mr Pretty, an intelligent practitioner in the metropolis, before the Medico-Chirurgical Society, is given, and in which the particular form of disease in discussion is noticed. " Mr Pretty (I quote from the Journal) makes some pertinent observations on what is described by the late Dr Clarke, as a particular convulsive disease of children, and which has been termed ' Cerebral Croup'. Mr Pretty's attention was particularly drawn to this disease, by its occurrence in two or three of his own children, one of whom having been, for several weeks, affected at indefinite periods, with paroxysms of spasms, accompanied with croupy inspiration, was seized with two slight convulsions in the morning, and a third in the afternoon, which terminated the child's existence. On dissection, the bloodvessels of the brain were found loaded, with watery effusion into the ventricles, and between the membranes: except some intus-susceptions in the intestines, there was no other mark of disease. The second child (they were twins) was seized with convulsions, the week after her sister's death, which was followed by repeated paroxysms of croupy and impeded respiration, threatening a repetition of the convulsions. Symptoms of meningitis, and even of effusion, supervened, as startings, screamings, insensibility, squinting, dilated pupils, &c., which formidable symptoms were removed by leeches, blisters, and calomel purgatives. The croupy symptoms continued for several months, and ultimately yielded to assafetida. A third child was seized in a similar manner, and the complaint was removed by the same means, as above described; but the croupy spasms continued for some time, till country air, and a good nurse, restored him to health. Mr Pretty has seen upwards of a dozen of similar instances, and in all of them he had reason to believe the head was the primary seat of disease."

With due deference to the high respectability of the gentleman who has detailed these cases, and laid them before the publick with so much laudable frankness, still I can have no hesitation in considering all and each of them as distinctly marked cases of enlargement of the thymus and bronchial glands, occurring in constitutions otherwise debilitated. In Case I., the dropsical condition of the brain, which was discovered on dissec-

tion, is by no means a proof that the primary seat of disease existed in the head; on the contrary, it was only a watery exudation from the extremities of the veins in the ventricles and meninges, arising from the pressure of the enlarged gland on the large venous trunks in the bottom of the neck. In Case II., the convulsions and symptoms of meningitis, to which the constitutional disease in the system might give a predisposing tendency, appear to have been superinduced by some incidental circumstance eluding detection, but must not be confounded with croupy paroxysms and impeded respiration, which originate in morbid enlargement of the thymus and bronchial glands.

In the succeeding number of the same Review, numerous extracts are given from a work lately published, entitled "Practical Observations on the Convulsions of Infants, by John North, surgeon-accoucheur, M. R. S. L., &c. &c." where the disease in question falls to be noticed. At page 166 of the Review, or 254 of the work, to either of which reference may be made, a very minute detail of symptoms are given as characteristic of the complaint, but which appears to me indicative of a series of morbid changes, brought on by painful dentition. While the child is suffering from irritation in the gums, the general health is impaired, and a train of nervous symptoms is evolved, while the imperceptible enlargement of the gland, at an indefinite stage of the disease, gradually gives a new character to the complaint, but so much interwoven with other derangements in the system, that there may be some difficulty in discriminating accurately the particular nature of the complaint. Croupy and spasmodic respiration, arising from the cause which I have assigned, is seldom attended with fever; whereas, when combined with dentition, nervous irritation, convulsion, and derangement in the digestive organs, there is in general considerable febrile action. The various symptoms enumerated by Mr North, may be attributed to two causes, viz. The first to painful dentition, the second to enlarged thymus gland. To the first source of ailment I would refer the following symptoms: the remarkable change which the infant quickly undergoes, the anxious countenance, the state of the nose, the pallid emaciated face, the temper of the child, the state of the bowels, the convulsive affection of the hand, thumb, wrist, ankle-joint, the tossing back the head, the frequent convulsive attacks, with distortion of the features, opisthotonos, &c. &c. To the second source of morbid phenomena (which, by the way, is probably only a consequence of the first), may be referred the state of respiration on awakening out of sleep, the loud crouping noise, the constricted state of the chest and larynx, the palpitation of the heart, the almost totally suspended state of respiration, the turgid and apoplectick state of the countenance, and sudden death, after the child seems to have recovered, and enjoyed good health for some weeks. In

such cases, on dissection, the veins in the meninges are loaded with blood, water is effused on the surface and in the ventricles, the veins in the bottom of the neck much distended, and the thymus gland, and sometimes the bronchial, much enlarged. The heart is generally found somewhat puckered, and no blood or coagulum, in auricles or ventricles; and sometimes the liver is greatly enlarged.

Here it may now be stated, though merely as matter of opinion, that in all the cases in which sudden death supervened, from morbid enlargement of this gland, as in the first, second, third, sixth, and seventh cases; the rapid series of changes in the animal functions, which effected the destruction of the organic system, seems to be these: a strong effort is made to inspire, by which effort the enlarged gland is made to obstruct the current of blood in the large veins coming from the head, in consequence of which the descending cava does not supply the stimulus of blood to the heart, in sufficient quantity to produce dilatation; while the pressure of blood on the brain, already encumbered or predisposed to morbid excitement by the distention of the bloodvessels, or effusion of water on its surface, and in the ventricles, seems to render (perhaps by tonic spasm) the contraction of the heart permanent, till resuscitation becomes hopeless, and death ensues. An opposite condition of the brain appears to produce results of a similar kind, when animals die convulsed by loss of blood; and in both cases after death, the heart exhibits similar appearances.

From the facts which have been presented in the history of these cases, and the appearances which were exhibited on dissection, the following inferences may be drawn:—

First, That the thymus gland is subject to disease, and susceptible of undergoing various morbid changes, such as scrofulous enlargement, scrofulous ulceration, and caseous degeneration.

Secondly, That diseases of the chest, sometimes in adults, and enlargements of this gland in children, frequently induce a dropsical condition of the brain, without being preceded or accompanied by the idiopathic symptoms of hydrocephalus.

Thirdly, That morbid enlargement of this gland may be inferred to have existed during life, when the child is cut off suddenly, without any previous complaint, from a fit of crying, or violent irritation of any kind, however it may have been induced.

Fourthly, That chronick enlargement of this gland may be inferred to exist in infants subject to fits, as in the first, third, and seventh cases, and in all cases of chronick, spasmodick, or cerebral croup, as this complaint has been variously designated by different writers.

Fifthly, That in all these chronick cases, water in general

will be found in the ventricles, and on the surface of the brain, in consequence of the pressure of the gland upon the trunks of the veins coming from the head.

Sixthly, That a dropsical condition of the brain, proceeding from venous exudation, may be cured, if the disease in which it originated* can be removed, and in the attempt to effect this,

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* To such as doubt the possibility of the absorption of water effused within the cranium, the following case may probably tend to remove scepticism :— C. H., a stout healthy child, the younger brother of the boy whose case is related at page 53, enjoyed good health, till he began to be troubled with his teeth. By the time he attained his seventh month, his health had obviously suffered considerably, notwithstanding that he had some temporary relief after the cutting of each tooth. Dentition advanced slowly, and the period of alleviation was short and incomplete. There was no flow of saliva from the mouth, nor eruption on the head, or behind the ears. He had hectic flushes, his bowels were often disordered, and he occasionally rejected his food by vomiting. By the time he was twelve months, he had gotten the incisors both above and below, but was delicate, and could neither walk nor stand firmly on his legs. The cutting of the bicuspidate and eye-teeth, produced still greater irritation in the system ; and though he never entirely lost relish for his food, his bowels were constantly disordered, and his emaciation was extreme ; the skin on his arms and legs hung loose, and might have been rolled round the finger. When he was about seventeen months old, the integuments over the anterior fontanel began to project, the sutures to open, and the head to enlarge. There never was the slightest symptom of convulsions, but the general debility and relaxation was extreme, and his hand trembled when he put a morsel to his mouth, similar to what is often observed to take place from habitual intemperance, or the infirmities of old age. The head was shaven, and a blister applied over the fontanel, with some apparent advantage. The blister was kept open by issue ointment, but when, as it sometimes happened, it was allowed to heal up for a few days, he was often observed to become dull and languid. I sometimes observed a perceptible improvement on him, in five or six hours after the reapplication of the blister. The disease, however, went on ; the coronal suture opened to the extent of three inches on each side, the integuments over the fontanel were tense and elastic, and projected like the segment of a large orange, and the sagittal suture opened throughout its whole extent. In this state he continued several months, during which the disease gradually increased. Death appeared now to be the most favourable termination of the disease, as life presented little else to my view than a lamentable state of hopeless imbecility. But with respect to the issue of the complaint, I was agreeably mistaken ; for he had not cut his last double tooth more than a fortnight, when some little amendment in his general health was perceived, and in two months more the sutures had come together, and the fontanel closed in or about three months from the cutting of the tooth. The caps which he had been wearing were now too large for his head, and by the measurement which I kept of it, in the course of ten weeks it shrunk fully three-fourths of an inch. He began to recover in October, when he was not quite two years old ; and though he never afterwards seemed to have a complaint, many months elapsed before he attempted to put a foot to the ground ; and in June the following year he could walk only a few paces. He has never since had a complaint worth mentioning, except such as are incident to children. His health is now good, and his mind is in every respect vigorous. I might mention another case which originated with hooping-cough, in which the evidence of effusion within the cranium, and subsequent absorption, is very conclusive ; but it is presumed that the case which has been narrated is sufficient to prove the truth of the statement in the text.

the patient must be treated in every respect as for an enlarged scrofulous gland.

It may possibly appear to many that these general conclusions have been drawn from insufficient data, and it may readily be granted that the subject requires further investigation. Enough, however, has been advanced to direct the attention of the profession to the condition of the thymus gland, in cases of sudden death, such as have been described above, and to the state of this gland, and the glands of the bronchia, in all fatal cases of chronick, spasmodick, or cerebral croup. It might also afford additional satisfaction to examine the nerve which supplies the gland, in connection with the nerves of the lungs and heart; and, perhaps, "the dorsal and cervical portions of the spinal cord;" but from an impression, that derangements in the function of a nerve are seldom detected by dissection, in these cases the state of the nerves has been almost entirely omitted. But, in submitting these cases to the consideration of the profession, I have been actuated by an earnest desire to state, with all possible accuracy, the facts of each particular case, with the appearances on dissection, that the professional reader may be enabled to judge for himself, and draw his own conclusion, independently of the views which have been suggested on the subject.

KILMARNOCK,
Oct. 5. 1826.

A Case of Chorea Sancti Viti, cured by the Use of the Argentum Nitratum. By G. ROBERTS, M.D. Physician to the Seamen's Hospital, and Senior Physician to the South London Dispensary.

IT is much to be regretted that the pathology of most, if not of all the chronic diseases of the encephalon, is involved in so much obscurity: for, were it otherwise, our practice in these maladies might *perhaps* "be stripped of its motley,"—and assume the garb of a rational, and reasoning science. At present the use of most of the remedies in these complaints, (particularly in such as will not allow of depletion,) is purely empirical, and we employ them continually without knowing their *modus operandi*, and rely upon them, from their generally beneficial effects. This alludes more particularly to those diseases of the brain which are dependent upon irritation, not immediately applied to it, but to some distant part; and which causes this organ to sympathize with the latter, to a violent extent. Chorea is an example of this state

of the general system whilst suffering from a peculiar, excited condition of the cerebrum, and which may be, and commonly is, referrible to the intestinal canal, as the *fons et origo mali*; which being at the time highly irritable, gives rise to those spasmodic actions, which are fully indicative of the manner in which that very important and sentient organ, the brain, is sympathizing with the part so stimulated.

In saying, that this disease depends upon an irritation which is acting indirectly upon the brain, very little is advanced; yet every thing which is known in regard to the exciting cause, is to be summed up in those few words; and all that remains to us, is to endeavour to discover those remedies which will not commonly fail us at our need, and which will act also by removing the cause of the complaint.

The subject of the following case had been afflicted with the disease three years previous to her applying to the Dispensary, when it lasted for a period of three months; it at length, however, entirely left her; and she remained altogether free from it, unti a short time previous to her being placed under my care.

Elizabeth Millar, æt. 12.—*January* 28. 1826.—Complains of the usual symptoms of chorea, attacking the right side; pulse 90, soft; tongue clean; speech very indistinct; bowels reported to be open.

The purgative plan was commenced. She was ordered to take every night at bedtime a powder, consisting of submur. hyd. gr. ij. pulv. aloes ℥ss.; and, during the day, purgation was kept up by means of a solution of sulph. magnes. in inf. quass.

1*st February*.—Considerable pain of occiput; stools very copious, black and offensive; in other respects remains the same. Repetr. pulv. et mistura epispast. occipiti.

5*th*,—Has entirely lost the power of speech, or even of uttering sound. By means of signs gives us to understand that the pain of occiput is better. Bowels are freely open; but stools are still offensive. Repet. pulv. sed adde tinc. carb. ferri ℥j.

This last was commenced with a determination to give it a fair trial, as it had been so much and frequently praised in spasmodic and nervous diseases.

8*th*,—Is nearly in the same state. The powder, since being conjoined with the carb. ferri, causes sickness. Contin. pulveres purgativi sine carb. ferri. R. carb. ferri ʒj. divide in vices octo, et sumat j. ter quaterve die, ex theriaco.

My reason for making so considerable an augmentation in the quantity to be taken of the iron, was an intimation that I had neither given sufficiently largely or frequently to insure its success.

She continued to use the chalybeate medicines in conjunction

with purgatives for more than a fortnight, until the stomach refused to retain the steel. It was immediately relinquished, and antispasmodics were exhibited in its place; still however adhering to the purgatives. All our endeavours proved abortive; and we returned to our old plan of purgatives alone, and more frequently repeated; still the disease refused to yield. Her spine was rubbed with Unguentum tartratis antimonii of the usual strength, but no pustules were produced; its strength was then doubled, bu with no avail.

Having read in some of the journals that the colchicum had proved serviceable in this complaint; this also had a fair trial, and proved as useless as the others.

Having thus nearly exhausted the catalogue of medicines which have been recommended in chorea, I was induced as a dernier resort (arguing from its having sometimes proved serviceable in epilepsy), to give her the nitras argenti. I commenced with one-eighth of a grain thrice a day, in combination with some extractum anthemidis. This medicine was steadily persevered in for one month, the quantity being gradually increased, until she took 1½ per diem. After it had been used for about a fortnight, the speech returned, and the menses appeared for the first time. It should be remembered, that purgatives were assiduously administered during the whole period of her being under my cure.

She now recovered rapidly, and soon left London for the country, where she remained for some time; and, when I last saw her, about a month since, she continued quite well.

Introducers of new medicines or modes of practice are so much in the habit of overrating the respective virtues of their favourites, that they not unfrequently break down under the burthen. This commonly happens, not so much from their inability of bearing their load, were they suffered to do so quietly, as from the world's disappointment at not finding the visions of an excited imagination realised. The idol is immediately hurled from his throne, and treated with vituperation and contempt. This is an every-day occurrence; and new remedies and methods of practice, pass in review before us, with a rapidity nearly surpassing thought. Thus, we find that but a very few medicines, which were first introduced into notice with a long catalogue of virtues appended to them, have been enabled, by their intrinsic merit, to make good the footing which they on their first appearance assumed; while, on the contrary, those which were either violently abused, or treated with disdain, have gradually increased in estimation, and have at length become of general and acknowledged utility.

It must also be allowed, that, in many instances, an useful

remedy has been slighted and abused, after a solitary trial, because it did not come up to the extravagant notions entertained of its virtues by the persons administering it. Would it not be equally as absurd as unjust, to endeavour to cast a stigma upon the usefulness of purgatives in chorea, because they failed to remove the disease on this one occasion; and it would be as ridiculous to estimate nitras argenti as a specifick in this complaint, because it proved highly beneficial in this one case.

I have merely stated the facts as they occurred, and have only to add, that I was induced to publish them, not from any idea of wishing the profession to suppose that lunar caustic was to be introduced to their notice as a new remedy; but being myself led to its use by the affinity which chorea bears to some species of epilepsy, and the known utility of the medicine in that disease, I was also in hope, that those practitioners who had more extensive opportunities of trying its virtues, might, from this case, be induced to do so; and that they would perhaps, at some future time, favour the medical world with the result.

There are some cases, in some of the early numbers of the Edinburgh Medical and Surgical Journal, of chorea cured by the nitrate of silver, which were under the cure of Dr Uwins. I was not, however, aware of their existence until this child had been well for some time.

31. New Bridge Street,
November 10. 1826,

Case of Cynanche Laryngea, in which the operation of Laryngotomy was performed after all signs of life had ceased, breathing restored, and the patient lived Eighteen Hours. By James Thorburn, Assistant Surgeon to the Seamen's Hospital ship Grampus, Greenwich, and Licentiate of the Royal College of Surgeons of Edinburgh.

John Hesdel, a seaman, æt. 45, was admitted a patient on board the Seamen's Hospital ship Grampus, Greenwich, on the 12th October 1826, at 4 o'clock P. M. He complained of much general weakness, with difficulty in breathing and swallowing. He had been seized two days previously with these symptoms, after constant exposure to wet and cold during a voyage from America. His bowels had been constipated for four days. Respirations were preternaturally quick, and expression of countenance anxious. On inspecting the fauces, there was observed redness, with some enlargement of the uvula; but no in-

crease of size in the amygdalae, or ulceration in any part. No treatment had been previously resorted to. He was immediately put into a warm bath, where the difficulty of breathing increased. The pulse having some degree of hardness in it, induced me to abstract from his arm twelve ounces of blood, and also to exhibit an emetic, in order to disengage from his fauces a quantity of mucus which impeded respiration. He was able to drink a little tepid water, but did not vomit freely. At six o'clock, two hours after admission, I found him in the act of expiring, and strongly convulsed. I endeavoured to cut into the larynx, but from the convulsive movements of his whole body, and particularly of the muscles of the throat, I could not succeed. In a minute or two the pulsations of the heart ceased to be felt, and the extremities became cold and stiff. His face was livid, features collapsed, and he lay apparently lifeless. I now made on opening into the larynx, by dividing the membrane that connects the thyroid with the cricoid cartilage. A catheter-shaped silver canula, to which a pair of bellows was attached, being introduced, artificial respiration was established, and kept up for about ten minutes, when natural breathing commenced by the canula. The first attempts at breathing were attended by a strong convulsive cough, induced by a quantity of bloody mucus, which was ejected from the tube with great force. In a short time he opened his eyes, and asked for a drink of cold water, but his stomach instantly rejected it. His breathing was improved by abstracting a few more ounces of blood from the arm, and by the application of eighteen leeches to his throat. Bowels were freely emptied by enemeta. Feculent discharge was hard, black, and very abundant. During most part of the night he was very restless, and at times low and sinking. He took occasionally a little wine and water, but his stomach was too irritable to retain it. An enema of arrow root with opium afforded some relief. The canula required to be removed every four minutes, in order to be cleared of the mucus, which was secreted in large quantities. Its introduction excited some irritation during the first hour, but afterwards he experienced from it little or no inconvenience.

On the morning of the 13th his appearance shewed that he was fast sinking. Pulse small and frequent, with cold extremities, great restlessness, and laborious respiration. He died at twelve o'clock, having breathed by the canula eighteen hours.

Dissection exhibited the following appearances.

The membrane common to the larynx and pharynx was thickened. Epiglottis of large size, with an edematous effusion into the cellular substance under the membrane.

The membrane covering the arytenoid cartilages so much thickened, as almost to close up the glottis, leaving only the space of a line intervening. The chordae vocales were also enlarged. No ulceration existed in any part. The membrane lining the trachea was very vascular, and covered with a thin glairy mucus; and the bronchia, with their ramifications in the lungs, were full of serum. Lungs otherwise healthy.

GREENWICH,
Nov. 3. 1826.

II. PRACTICE OF SURGERY.

Observations on Aneurism of the Abdominal Aorta, accompanied by the Obliteration of that Artery. By ALEXANDER MONRO, M. D. F. R. S. E., Professor of Anatomy and Surgery in the University of Edinburgh, and President of the Royal College of Physicians, &c. &c.

To the Editor of the Edinburgh Journal of Medical Science.

SIR,

IN compliance with the wish that has been expressed for more full information as to the case of obstruction of the abdominal portion of the aorta, to which I have alluded in your former number, I have sent to you the subjoined statement, containing a much more detailed account of that curious and very interesting case, which fell under my notice about eight months ago, together with some remarks on aneurism of the descending aorta. The inclosed drawing, which is of the size of nature, was taken by that excellent artist Mr Macinnes, before the parts had been corrugated, by having been immersed in spirits, and may perhaps tend to elucidate the nature of the case. Yours,

A. MONRO.

The patient, a middle aged man, and well limbed, had, in consequence of exposure to cold, been seized with a pain in his side, difficulty of breathing, cough, followed by expectoration, quick pulse, and the other symptoms of phthisis pulmonalis.

Notwithstanding all the remedies that were employed, the disease made rapid progress, and proved fatal in the course of four months.

It merits particular notice, that this man had no degree of weakness, numbness, or palsy in his limbs, and could walk about until a day or two before his death.

As the patient's death was owing to phthisis, the thorax had been opened in the usual manner, by raising the sternum: the lungs presented the same morbid appearances as are usually detected in cases of tubercular phthisis, and the heart was in its natural state. After the contents of the thorax had been examined, the parietes of the abdomen were freely divided, so as to expose all the abdominal bowels, all of which were also in a healthy state.

Upon turning over the convolutions of the smaller intestines, a distinctly circumscribed tumour was observed lying upon the second and third lumbar vertebrae, which, upon a more minute investigation, proved to be connected with the descending abdominal aorta. This tumour was about the bulk of a middle sized orange, and was considerably flattened; and it adhered very firmly to the second and third lumbar vertebrae, which proved to be in a carious state. When the tumour was compressed, it felt somewhat hard, and evidently was filled by a quantity of clotted blood.

Upon cutting through the sac, it was found to be of considerable thickness, and was much thicker than the coats of any sound artery; and it may be also remarked, that this sac did not seem to be composed of distinct layers, nor was there any deposition of bone in any part of it.

The aneurismal sac in appearance very much resembled thick white leather, which had been steeped for a considerable time in water, and seemed to be formed of compact cellular substance.

The abdominal aorta entered into the very middle of the sac: (Vide Engraving), and I am disposed to think, that it was formed by the uniform expansion of the coats of that artery, at the place of its division into the two great iliac arteries. In this, as in other aneurismal tumours of a small size, the coats of the artery seemed to have been pretty uniformly expanded, and their unnatural thickness was probably owing to the addition of a quantity of compact cellular substance.

The aneurismal tumour was filled by portions of coagulable lymph, which were not disposed in parallel layers of an equal thickness, as in the greater number of aneurisms: but of short and unconnected portions of coagulable lymph, which crossed each other in different directions, so as to form a confused and irregular mass, which, on being pressed between the fingers, was evidently mixed with a gritty substance like sand.

After the removal of the sac, I carefully examined its inner

surface, but could not discover any appearance of a rupture of the inner coats of the aorta.

The coeliac, superior mesenteric, renal, inferior mesenteric and lumbar arteries, were not larger than usual. A very correct idea as to the size of the intercostal and epigastric arteries could not be formed, as they had been divided in cutting through the parietes of the thorax and abdomen.

Remarks.—The arteries within the abdomen, like those of the other parts of the body, are liable to fall into a morbid state, and this morbid state is sometimes partial, but on other occasions general.

The partial enlargement is most frequent at the division of the aorta into its two great branches, the common iliac arteries, owing, I apprehend, to the resistance which is there opposed to the free course of the blood downwards, by the angle at which these iliac arteries are sent off from the parent trunk.

An aneurismal diathesis sometimes prevails at the same time in the different arteries within the abdomen, of which a remarkable instance has been recorded by my uncle Dr Donald Monro. He has observed: "As this man died so suddenly, his body was opened the second day after his death, when several aneurisms were found in the cavity of the abdomen.

"The superior mesenteric artery, just as it arose from the aorta, was dilated for above the length of an inch and a half, and was near an inch diameter in the middle of the aneurismal sac, and was filled with a firm coagulum. The left emulgent artery was dilated at its beginning to the size of a filbert nut; and the inferior mesenteric artery was beginning to be dilated just as it arose from the aorta." And, as in the case related by Sir A. Cooper, an aneurism in the abdominal aorta, sometimes occurs in the same individual, as an external aneurism.

The size of aneurisms in the abdominal aorta is extremely various, and, in general, they expand to a considerable extent, when their progress is not much resisted *.

In the case the more immediate subject of this essay, the tumour had attained but a small bulk, when compared with other aneurisms similarly situated. This, perhaps, may be imputed to the state of the coats of the artery, and in part to the tumour having been, as it were, strapped down by the inferior mesenteric artery, which adhered very intimately to its coats, and

* De Haen has made mention of an exception to the above remark. An aneurism of the aorta protruded between the second and third ribs, and the external tumour, instead of increasing in bulk, suddenly disappeared, and was not perceptible for above a month before the patient's death. Upon dissection the arch of the aorta was found very much enlarged.

passed over the front of it; which artery, it may be remarked, was probably highly irritated by the tumour, for its internal coats were of a deep red colour, and the outer coat seemed to my eye to have been somewhat thickened. Aneurisms of the abdominal aorta have sometimes attained so large a bulk as to fill the greater share of the abdomen, and have also compressed to a certain degree, the bowels of the chest, and occasioned difficult breathing.

My uncle Dr Donald Monro, has published a very detailed account of an aneurism of this description, which, on account of its very particular nature and termination, merits the notice of the reader, and therefore I have subjoined a brief extract from that remarkable case:—

"We observed, that the left side of the cavity of the abdomen was filled with one large black tumour, which, on examining, proved to be the cellular membranes behind the peritoneum, which covered the kidney, filled with blood. On cutting through the peritoneum, and these membranes, we found the kidney sound below, which we removed; and then laid the aorta bare from its coming out of the heart, till near its division into the two iliacs, which brought into view a large aneurismal sac, which extended from the diaphragm to the os pubis.

"The upper part of this aneurismal sac was formed by a dilatation of the coats of the left side of the aorta, which at first view seemed to be dilated from where this vessel first passes through the diaphragm, till some way below where the emulgent artery of the right side goes off to the kidney; though it afterwards appeared that the dilatation began much lower, about an inch above the rise of the cœliac artery, and extended no further than just below where the right emulgent goes off. The distended coats of the artery extended upwards and downwards, and towards the left side, so that this part of the sac which seemed to be formed by them was full four inches long, and three inches broad, though the length of the aorta which was dilated, was but two inches in all.

"The lower part of the sac was larger than the upper, and extended as far down as the os pubis; and its coats seemed to be made up of the peritoneum and cellular membranes; and it appeared as if this part of the sac had been recently formed by the coats of the true original aneurismal tumour giving way at the lower part, and allowing the blood to pass into and distend the cellular membranes behind the peritoneum, and to raise and push it forwards. Perhaps the coats of the true aneurism began to give way at the time the patient complained of the sensation of a stream of cold water running down into the lower part of the left side of the belly.

" In dissecting off the membranes, to have a more distinct view of the whole tumour, I accidentally tore part of the sac, where its coats seemed to be formed of the peritoneum and cellular membranes, and there came out a quantity of clotted blood. I then introduced my finger through this aperture, and found that the upper part of the sac was filled with a firm fibrous coagulum, which afterwards, when it was taken out, appeared to be exactly similar to what is always found in aneurisms which have been of any standing; but the lower part was filled only with recent coagulated blood. The aneurismal sac adhered firmly to some of the vertebræ, and to the lower ribs; and these bones were become carious, and formed part of the sides of the sac.

" I then had the aneurismal sac cut out of the body, and, in dissecting it away, I observed that it adhered very firmly to the last dorsal and the first and second lumbar vertebræ; and that the pulsation of the blood had worn away part of the aneurismal sac, where it adhered to those bones, and that they were bare and carious on the left side of their bodies; that a number of small osseous spines had grown out every where from the carious parts; that the cartilage between the first and second lumbar vertebræ was worn away for near half an inch deep on the fore and left side; and that the lower side of the last rib was bare and carious.

" I next examined that part of the sac which had formed the large tumour on the back, and found, that the force of the blood had driven the sides of the dilated artery backwards, quite through the muscles of the back, till it had reached the skin.

" The hollow which remained, after the aorta, with the aneurismal sac, and fibrous coagulum, were taken out of the body, appeared to be about three-fourths of as exact a spherical figure, of three inches and a quarter diameter, as if it had been formed by a turning wheel. It reached from the lowermost rib to the spine of the ileum.

" On examining the inside of the fore part of the aneurismal sac (the only part which could be taken out entire), I observed that the aorta had not begun to be dilated for near an inch lower than it had appeared to be on the outside; that the artery had returned to its natural size again, immediately below where the right emulgent artery takes its rise from the aorta; and that there were a number of osseous concretions spread on the internal surface of the sac round the lower orifice where the aorta returned to its natural size, and went out of the sac.

" And, on examining the fibrous bloody concretion, which filled the upper and back part of the aneurismal cyst, I found that there was a hollow or furrow on the fore part, through

which the blood could pass freely from the upper part of the descending aorta to the lower, to be distributed through the lower extremities, which was certainly the cause why the pulse continued regular, and without intermission during the whole course of this tedious and troublesome disorder."

Through the kindness of the late Dr Rutherford, I am enabled to make an important addition to the history of aneurism of the abdominal aorta. The case was drawn up for my own gratification and instruction : and I have given it in the Doctor's own words.

" The abdomen being opened, the viscera, in general, appeared to be remarkably sound; and, though the body was much emaciated, yet no inconsiderable quantity of fat was observed betwixt and under the membranes. The stomach, as well as the great arch of the colon were much contracted. The solid viscera, viz. liver, spleen, and kidneys, were very pale. The liver was at first thought to be enlarged; but this appearance probably arose from the right lobe being pressed forwards and towards the left side, by a prominence of the part behind. The gall-bladder was flaccid, but contained a quantity of turbid pale brown or yellow bile. The pancreas was rather larger than common ; the spleen was of natural size and shape, but, like the liver, was protruded, the parts behind being also unusually prominent. For the same reason, the kidneys also projected farther into the cavity of the abdomen than is commonly to be observed. They were of a natural shape, but considerably smaller, especially the right one, than common. The parts that were so prominent at the back part of the abdomen were nowise discoloured; and, unless by their prominence, gave no indication of their being in a morbid state.

" The cartilages of the ribs were partly ossified, so that they could not be divided without the aid of a saw. When they, with the sternum, were raised, the parts within the thorax exhibited a natural appearance. But presently it was found that there had been an effusion of a vast quantity of blood into the right cavity of the thorax. Hence a continued mass of coagulum was spread over the surface of the lower and middle lobes of the lungs, insinuated into the fissures betwixt the lobes, and accumulated abundantly behind the lungs, and over the surface of the diaphragm. Besides, many pounds of red serum were contained in the same cavity. In the left cavity of the thorax there was only a small quantity of clear serum. The lungs, as to texture, were in general perfectly sound, only a few very hard roundish tubercles, not much larger than garden peas, were felt in them, immediately below their surface, and a few bands of cellular substance connected them, in certain points, particularly

the right lobes, and to the tendon of the diaphragm. The pericardium was nowise diseased; it contained a little yellowish serum. The heart was pale and uncommonly small. Both the heart itself, and the large vessels proceeding from it, were quite empty of blood.

"All the effused matter being removed from the right cavity, and the lungs raised, the diaphragm was discovered to be much diseased, protruded far into the thorax, greatly thickened, of a very deep red or purple colour, with a large ragged perforation in the most prominent part, through which the blood had issued into the right cavity of the thorax. Through this perforation was a communication with a very large and irregular preternatural cavity situate behind the posterior parietes of the abdomen. This, on the right side, was situate behind the right lobe of the liver, or upper part of the right kidney. By further examination, it was found to extend across the spine, then expanding, run downwards, so as to form a large oblong pouch, corresponding in situation and extent to the external tumour that had been observed on the left side of the spine. This great cavity was filled with coagulated blood, and such was its capacity, that it contained betwixt three and four pounds. Within, where the cavity crossed the spine, the bones were bare, rough, and greatly eroded, the interosseous cartilages projecting far beyond the wasted bodies of the vertebræ, (I believe the last dorsal and two first lumbar). It was not difficult now to trace the source of the extravasated blood. All the great bloodvessels within the thorax, and in the upper part of the abdomen, were in appearance perfectly sound, and of a natural size. But about the first and second lumbar vertebræ, the aorta was found to have concreted most firmly with the anterior parietes of the cavity; and searching from within the cavity, it was found, that in this place the coats of the artery were completely eroded and destroyed, so as to afford a large and free passage or opening, estimated at an inch and a half in length, from the artery into the cavity."

Other aneurisms of the abdominal aorta project backwards at the side of the spine, and sometimes have attained a most enormous size. I have had occasion to see two instances, in which the aneurismal tumours in the back were at least eighteen inches in circumference; and they were so very heavy, that the patients could not turn in bed without aid.

In this case of obstructed aorta, I did not dissect the coats of the aneurismal sac, lest I should thereby have injured the appearance of so rare a specimen; and, besides, it did not seem to be necessary, as my Father has already investigated this part

of anatomy with much attention. In a paper on aneurism, which was published in vol. 3d of the Literary and Physical Essays of this place, the following description has been given of the dissection of an aneurismal sac, in a letter from my grandfather to his son Dr D. Monro. " The aneurismal sacs you sent me to Edinburgh were dissected by your brother in my presence. The appearances were the following :—The external loose cellular, and the cellulo-membranous, coats being dissected away carefully, the circular fibrous, commonly called muscular, coat, was evidently seen continued on all the three small sacs in every part of them, as in fig. 9. BB, but was thicker there than in the sound part of the artery ; and, in the most enlarged part of the sacs, an extraneous substance, resembling a soft steatomatous matter, was intermixed with the muscular fibres. The cellular substance lining the inside of the muscular coat was considerably thicker than natural, and had much the same appearance of an extraneous substance filling its cells. The internal membrane of the artery adhered so firmly to these cells, that it could not be separated, but seemed thicker than in a sound state. Though the circular fibres could be observed at the sides of the incision made into the fore part of the sac of the left ham, as represented in your figure ; yet, as the dissection was continued backwards towards the most distended part, these muscular fibres became less observable, and could not be traced. Whether this apparent defect of them here was owing to a much greater proportion of the extraneous substance above mentioned, or to their having been destroyed by the great distention, is difficult to determine. The internal cellular coat of this sac was considerably thicker than in the smaller ones, but of the same texture. The most internal membrane was in a thickened adhering state. In the part of the great sac of the right ham which came to Edinburgh, no circular fibres could be seen, and the structure was otherwise much the same as that now described of the back part of the sac in the left ham."

Professor Scarpa, one of the most justly celebrated anatomists in Europe, has also given a very distinct and beautiful representation of the proper fibrous or muscular coat, as he calls it, in a case of an aneurism of the thoracic aorta, which is represented in Fig. 1. of his Tab. IX. ; and as may be seen in Plate I. of Mr Wishart's translation of Scarpa on Aneurism.

The late Mr Wilson of London, whose skill and accuracy as an anatomist have been universally acknowledged, has observed, " In the true aneurism, at the beginning of the disease, the coats of the artery are not ruptured ; on the contrary, they are often increased in thickness before they become morbidly

dilated; and, in general, the alteration in structure appears to begin in the inner and muscular coats."*

It may be proper to add, that my assistant Mr Mackenzie, who has lately paid much attention to the structure of aneurismal arteries, has assured me, that, in such diseased arteries, he has observed the muscular structure much more distinctly than in those arteries which are in a sound state.

According to Scarpa, the proper fibrous or muscular structure is seen when the aorta is in a state of aneurism; but I never could distinguish it when that artery is in a healthy condition; and besides, it may be added, that, in aneurisms of the extremities, the muscular fibres of the aneurism are, on account of their greater size, much more apparent than in an aneurism of the abdominal aorta.

Aneurisms of the abdominal aorta generally prove fatal before they burst, by the derangement which they occasion in the functions of the abdominal bowels, but sometimes they burst into the abdomen, or even into the thorax, as in the cases described by Dr Rutherford; and they generally have occasioned absorption of the contiguous vertebræ.

In the case of obstructed aorta, that portion of the artery which is immediately above the aneurismal tumour is evidently contracted, and, in that place the coats of the artery were to the touch firmer than usual, and also whiter. Above this contracted portion, a conical shaped plug, of a firm nature, was placed †, with the smaller extremity undermost. This plug was of a deep red colour, and seemed to be composed of a solid mass of coagulable lymph, intermixed with the red globules of the blood; it is an inch and one-eighth long, and about an inch broad at its basis, is fixed by thin laminæ of coagulable lymph to the sides of the aorta ‡.

This mass of coagulable lymph filled and completely obstructed the passage of the blood through the aorta. As this plug adheres intimately to each side of the vessel by thin and dense layers of coagulable lymph, it appears to me, that it was not formed *in articulo mortis*, but some time before death, and probably by an inflammatory action of the vasa vasorum of the coats of the aorta.

The contracted portion of the aorta, between the lower part of the conical shaped plug and the aneurismal sac, was impervious: I could not pass even the smallest probe through it.

The obstruction of the axillary, humeral, inguinal and popli-

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* Lectures on the Vascular System, London 1819.

† See Engravings, letter A. ‡ See Engravings, letter D.

teal arteries, by coagulable lymph, and the maintenance of the circulation of the blood by the lateral anastomosing arteries, has been described at great length in many books on modern surgery, and particularly by Mr Hodgson, in his valuable Treatise upon the Diseases of the Arteries and Veins, and is now therefore regarded with little interest;—but, complete obstruction of the descending aorta cannot fail to attract much notice, as it shews the resources of nature.

The above case is novel in this point of view;—the history of the individual was well known,—and he did not labour under any one symptom which led to a suspicion during life that his descending aorta was impervious.

The coagulation of the blood within the bloodvessels of a living animal, is one of the most beautiful resources of nature for preventing the loss of blood; and it takes place from various causes, even within the larger arteries of the body.

I had occasion to meet with one instance in which the arm had been torn off, and what was very remarkable, not above a couple of ounces of blood were lost. The patient's body had at the moment the arm was torn off been very much injured, and he died in the course of three days, from a violent inflammation of the chest. At the post-mortem examination, the torn axillary artery and corresponding vein were found to have been filled with coagulable lymph.

In the same manner, in cases of abscess of the lungs, the bloodvessels in the vicinity of the seat of the disease are found filled by coagulable lymph; and many other similar instances might be enumerated, did the occasion require it.

With regard to aneurisms, it may be remarked, that a coagulum is very rarely formed until the sac has attained a very considerable bulk; and it takes place, in the first instance, in that part of the sac, in which the blood is out of the direct current of circulation; hence, a spontaneous cure will be more readily accomplished in those instances, in which a large sac communicates by a narrow neck, with an artery which is not enlarged, than in such aneurisms, as are of an oval form, and are occasioned by the uniform expansion of all the coats of an artery, and in which the artery enters into the middle of the sac, as in the annexed engraving. In the majority of the instances which I have examined, a channel was left, through which the blood continued to flow. But, in a few rare examples, the coagulum fills up the whole cavity in which it is formed, so as completely to obstruct the vessel, as in the subject represented in the annexed engraving. In some instances, the cause of this complete filling up of an artery is quite obvious,—it is the re-

sult of pressure. Thus, I had occasion to meet with an instance of aneurism in the arch of the aorta, in which the left arteria innominata was slightly thickened; the left carotid artery was completely obstructed by a regularly organized lymph; and the vein common to the left subclavian and left internal jugular vein, was converted, for the space of two inches, into a ligamentous chord.

In the case of obstructed aorta, the formation of the plug above the aneurism had probably occasioned the cure of the aneurism; but it is not easy to say what had led to the formation of that coagulum.

In the greater number of aneurisms no coagulum is formed, excepting within the aneurismal sac, notwithstanding which a spontaneous cure sometimes has takes place.

In short, whenever there exists a greater disposition in the blood to coagulate, than in the artery to expand, a coagulum will fill up the enlarged artery, and a spontaneous cure sometimes follows.

It may further be observed, that the obliteration of certain arteries and veins takes place, even when there is no reason to suppose the coats of these arteries and veins to be in a morbid state. This happens when it is no longer necessary for the due performance of certain functions in the animal economy, that the blood should follow a particular course. Thus the ductus arteriosus, and umbilical arteries and vein, become obstructed in a short time after birth; and, in proportion as the ductus arteriosus is contracted, the branches of the pulmonary artery become so much enlarged, as to be capable of admitting the whole blood which is sent to them by the contraction of the anterior ventricle of the heart.

The case which fell under my notice, affords a striking example of the circulation being carried on, when none of the blood reached the bowels of the pelvis or inferior extremities, by the medium of the trunk of the aorta; and also, that the blood may be diverted from its usual channel, without a derangement of the functions of that part of the body which is usually supplied by the aorta.

In the case now under consideration, a part of the blood took the circuitous route of the anastomoses, between the internal mammary and epigastric arteries; another part of it probably found its way to the pelvis and inferior extremities, by the medium of the anastomoses between the phrenic, lumbar, ileo-lumbar, and circumflex arteries, and by the anastomoses between the ascending branches of the gluteal and lumbar arteries. I conceive that but a small part of the blood found its way downwards by the anastomoses between the internal mammary and

epigastric arteries; this would have led to their enlargement, which was obvious; besides, there must be a considerable impediment to the free flow of blood by that channel, for the usual current of the blood is then reversed,—for, instead of the blood rising upwards towards the internal mammary artery, as in the natural circulation, it must have descended through that vessel towards the inferior extremities, by which the natural course of the blood is reversed.

If aneurism in the abdominal aorta be seated between the origin of the superior and inferior mesenteric arteries, I am led to suppose, from a preparation in my Museum, in which a ligature had been thrown around the descending aorta of a living dog, and, from the consequent enlargement of the anastomosing branch between the superior and inferior mesenteric arteries, and also by the result of the following experiment, made upon a dead body, that a considerable portion of the blood flows downwards by that channel.

I divided the abdominal aorta; one pipe was fixed into the upper portion, and another into the lower portion of that vessel. A coloured injection was thrown into the uppermost pipe with force, and in the course of a minute a considerable portion of the injection flowed out at the mouth of the pipe, which had been inserted into the lower portion of the abdominal aorta; and I found that the arteries of both inferior extremities had been completely filled by the injection.

From this experiment, it appears to me to be a legitimate conclusion, that if, in this case, where there had been no previous obstruction in the aorta, and no enlargement of the anastomosing branches, the injection had passed readily from the upper to the under part of the body, by the medium of the anastomosing branches of the superior and inferior muscles, the thinner fluid, the blood, would certainly also have passed by the same unusual route, if the aorta were obstructed, in consequence of disease. When the lateral branches sent off from an artery are large and numerous, as at the elbow and knee joints, it might have been expected that the blood would still flow to the hand or foot, though the main trunk be obstructed; but when there is a greater disproportion between the size of the obstructed artery and the lateral anastomosing branches through which the blood must afterwards pass, as in the obstructed aorta, there is reason to be apprehensive of a deficiency in the necessary supply of blood to the parts beyond the seat of the obstruction; yet that did not take place in this case, for the limbs of the patient were not, in the slightest degree, paralytic or shrunk; nor was there any symptom which, during the life of the patient, led to a suspicion of the existence of any disease in the arterial system.

My friend Professor Graham has described an instance of an obstruction of the thoracic aorta. The blood, in this instance, had been impelled with great force into the great left subclavian artery, and also into its branches the internal mammary and superior intercostal arteries, which occasioned a considerable enlargement of these arteries. The blood, therefore, reached the inferior extremities chiefly through the medium of the inosculations between the superior intercostal and mammary arteries, with the three arteries arising beyond the seat of the obstruction of the aorta.

The blood followed a similar course in the instance of contracted aorta which fell under the notice of Mr Paris. The enlargement of the thoracic arteries was so remarkable as to be evident before the body was opened; and, upon dissection, the arteria innominata and left subclavian arteries were found enlarged to twice their usual size, and also the internal mammary, phrenic, and transverse arteries of the neck.

But the case now under consideration is of an opposite description; for the arteries in the more immediate vicinity of the tumour, viz. the lumbar, mesenteric, and cœliac arteries, were *not* enlarged beyond the usual standard; which extraordinary fact perhaps admits of explanation, on the idea, that, as the obstruction had probably been of considerable duration, hence the collateral anastomosing arteries, which had previously been enlarged, had, as in cases of external aneurism, regained nearly their natural caliber.

It is matter of much regret that the previous history of the patient whose body was dissected by Dr Goodison, could not be obtained. Considering the vicinity of the tumour to the hypogastric plexus of nerves, which includes two-thirds of the aorta, and considering likewise the carious state of the second and third lumbar vertebra, and the pressure made upon the vena cava inferior, it is remarkable that, in the case which fell under my notice, there were no symptoms of the disease during life, no degree of weakness or swelling of the limbs, nor derangement as to the functions of the bowels of the pelvis.

There is a peculiarity as to the cure of aneurisms of the aorta. In the case of an external aneurism, after the deposition of the layers of the fibrine of the blood has taken place, by which the artery is obstructed, the layers of fibrine are absorbed, and the opposite sides of the diseased artery grow together; whereas the same did not happen in which the aorta had been obstructed. From the vicinity of the aneurismal tumour, in the case of obstructed aorta, to the lumbar vertebrae, the vessels of the periosteum proper to these bones must have been irritated; but they did not, as in the greater number of instances in which

an aneurism is in the immediate vicinity of a bone, secrete bony substance; and, in the case alluded to, that part of the sac which was in contact with the vertebrae had been absorbed, so that the diseased lumbar vertebrae constituted a part of the walls of the aneurism.

Treatment of Aneurism.—To those who are conversant with the history of scientific surgery, the valuable observations of Sir A. Cooper on different aneurisms, and on the improved mode of treating those of the carotid and inguinal arteries, and of the abdominal aorta, which have been introduced by that distinguished anatomist, are familiar. The case of obstructed aorta, which has been above described, cannot fail to be read with peculiar interest by the medical world at large, and by Sir Astley in particular. Nature had in this instance produced the same effects as the ligature which Sir Astley had thrown around the abdominal aorta, and has pointed out the accuracy of those principles, and the propriety of his attempt to save the life of one who was weltering in his blood, and in the most imminent risk of immediate dissolution.

The filling up of an aneurismal tumour by coagulable lymph, is brought about, in some cases, by diminishing the impetus and velocity of the blood which flows to the seat of the disease, by the repeated detraction of blood, by low diet, rest, or by the use of the foxglove; and, it may be remarked, that, even when the disease is seated in the arch of the aorta, into which the blood is driven with great force from the left ventricle of the heart, such means sometimes prove efficacious.

I have had occasion to meet with two instances, in which very large aneurisms of the aorta were, by such a mode of treatment, filled up by layers of coagulable lymph. In the first of these remarkable cases, part of the breast bone, and a part of three of the upper ribs, had been absorbed; the tumour was external, and measured fifteen inches in circumference, and at first the tumour pulsated uniformly over its whole surface. The pulsation in the tumour became gradually less distinct, and at length ceased. The patient died in the course of eighteen months afterwards, from phthisis pulmonalis, and upon dissection I found the greater part of the aneurism filled by lymph.

In the other case, the aneurismal tumour was as large as a child's head. This patient laboured under excessive difficulty in breathing, his face, and more especially his nose, was very much swollen, so that he resembled a monkey. This symptom according to Aretæus, strongly marks the difficulty with which the blood passes through the lungs.

His difficulty of breathing increased to a most distressing ex-

tent before death. Upon dissection, eight pounds of water were found within the chest, and a very large tumour connected with the arch of the aorta, which was completely filled by layers of coagulable lymph. Neither of the above patients died from a rupture of the arch of the aorta. The large aneurism, by pressing upon and irritating the lungs, occasioned phthisis, and in the latter, preventing the free flow of blood through the lungs, had occasioned an effusion of water within the chest, which proved the more immediate cause of death. But in the instance now under consideration, a complete plug of coagulable lymph was formed within the abdominal aorta, though the patient walked about, and had not been restricted to very low diet before death.

A more certain way of arresting the progress of an aneurism, is by applying a ligature around the artery which feeds the aneurism.

Combining together the results of the experiments of Sir A. Cooper upon dogs, (and which, it may be remarked, have been attended with similar results in the hands of others), and the cases which have fallen under the notice of Dr Goodison and of myself, there can be no doubt as to the safety and expediency, in certain cases, of throwing a ligature around the abdominal aorta.

To Mr Tyrrell we are indebted for the following account of the manner in which Sir A. Cooper performed the operation.

" The patient's shoulders were slightly elevated by pillows, in order to relax, as much as possible, the abdominal muscles; for I expected that a protrusion of intestines would produce embarrassment in the operation, and was gratified to find that this was prevented by their empty state, in consequence of the involuntary evacuation of the fæces. I then made an incision, three inches long, into the linea alba, giving it a slight curve, to avoid the umbilicus; one inch and a half was above, and the remainder below the navel. Having divided the linea alba, I made a small aperture into the peritoneum, and introduced my finger into the abdomen; and then with a probe-pointed bistoury enlarged the opening into the peritoneum to nearly the same extent as that of the external wound. During the progress of the operation, only one small convolution of intestine projected beyond the wound.

" Having made a sufficient opening to admit my finger into the abdomen, I passed it between the intestines to the spine, and felt the aorta greatly enlarged, and beating with excessive force. By means of my finger nail, I scratched through the peritoneum on the left side of the aorta, and then gradually

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* *Vide* Sir A. Cooper's Lectures on Surgery, London, 1825.

passed my finger between the aorta and spine, and again penetrated the peritoneum, on the right side of the aorta.

" I had now my finger under the artery, and by its side I conveyed the blunt aneurismal needle, armed with a single ligature behind it; and Mr Key drew the ligature from the eye of the needle to the external wound, when the needle was withdrawn.

" The next circumstance, which required considerable care, was the exclusion of the intestine from the ligature, the ends of which were brought together at the wound, and the finger was carried down between them, so as to remove every portion of the intestine from between the threads; the ligature was then tied, and its ends were left hanging out of the wound.

" During the operation the fæces passed involuntarily, and the patient's pulse, both immediately and for an hour after the operation, was 144 in a minute. I applied my hand to his right thigh, immediately after the operation, and he said that I touched his foot, so that the sensibility of the leg was very imperfect.

" The omentum was drawn behind the opening as far as the ligature would admit, so as to facilitate adhesion; and the edges of the wound were brought together by means of a quilled suture and adhesive plaster.

" He remained very comfortable until the following evening, when he vomited, and his fæces passed off involuntarily. 27th, Seven o'clock A. M. had passed a restless night, and had vomited at intervals; pulse 104, weak and small; pain in his head; great anxiety of countenance; very restless, and his urine dribbled from him. He gradually sunk, and died at eighteen minutes after one o'clock, having survived the operation forty hours.

" *Dissection.*—No peritoneal inflammation, but at the edges of the wound, which were glued together by adhesive matter, excepting at the part at which the ligature protruded. The thread had been passed around the aorta, about three quarters of an inch above its bifurcation, and rather more than an inch below the part at which the duodenum crosses the artery; it had not included any portion of omentum or intestine. Upon carefully cutting open the aorta, a clot, of more than an inch in length, was found to have sealed the vessel above the ligature; below the bifurcation, another, an inch in extent, occupied the right iliac artery; and the left was closed by a third, which reached as far as the aneurism: all were gratified to observe the artery so completely shut in forty hours. The aneurismal sac, which was of a most enormous size, reached from the common iliac artery to below Poupart's ligament, and extended to the outer part of the thigh. The artery was deficient from the up-

per to the lower part of the sac, which was filled with an immense quantity of coagulum *."

From what has been above stated regarding obstruction of the abdominal aorta, it follows;

1*st*, That an aneurism of the abdominal aorta, accompanied by an obstruction of that vessel, is not invariably characterized during life by any one pathognomonic symptom, even when there is reason to conclude that the disease had been of some duration; and that it may exist without any remarkable enlargement of the internal mammary and epigastric arteries.

2*d*, That an aneurism of the abdominal aorta does not prove invariably fatal, as that vessel has been sometimes completely obstructed by a plug of coagulable lymph; notwithstanding which the blood still flowed to the lower parts of the body.

3*d*, That a ligature may be passed around the abdominal aorta, with the prospect of saving life, when the aneurism is seated in that part of the aorta which intervenes between the origin of the superior and inferior mesenteric arteries, and also when the aneurism occurs at the division of the aorta into the great iliac arteries.

4*th*, That, during the passing a ligature around the abdominal aorta, great caution is requisite, lest a part of the hypogastric plexus of the nerves which surrounds two thirds of that vessel, be included in it, which would undoubtedly bring on an incurable palsy of the inferior extremities, and materially derange the functions of the bowels of the pelvis.

Lastly, that, upon consulting the records of physic and surgery, it will be found, that our knowledge of the nature and treatment of aneurism has arrived gradually at its present state of perfection, in consequence of the investigations, experiments, and operations, that have taken place chiefly in this country; and, it may be added, that the cases of obstructed aorta which have been above described, render complete the history of aneurism.

Explanation of Plate I.

THIS engraving is of the same size as nature, and gives a back view of the aorta of an adult male.

I. Points out the abdominal aorta, which was opened from behind.

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* "In an operation which I lately performed of tying the external iliac artery much above Poupart's ligament, I think I could with little difficulty have reached the aorta, by turning up the peritoneum without dividing it; and should I again wish to put a ligature on the aorta, I should prefer this method to the one I have before adopted."

II. Points out the origin of the superior mesenteric artery, which is not larger than that vessel is in its sound state; an observation which may be extended to the lumbar arteries, which are referred to by Nos. III. and IV.

V. Points out the plug which filled the aorta. It is composed of a very solid mass of coagulable lymph, with which there were a number of the red globules of the blood intermixed, which gave it a deep-red colour.

VI. Refers to a cut which was made into the plug, in order to discover its nature.

VII. VIII. Point out two thin masses of coagulable lymph, by which the conical-shaped plug was firmly fixed to the side of the aorta; and the engraving also exhibits the separation of the component coats of the aorta, which spontaneously took place after the artery had been opened.

At No. IX. the abdominal artery felt hard and like a solid cord, and it was found impossible to pass even the smallest probe through it down to the aneurismal sac marked by

X. X. This portion of the vessel was considerably contracted, and was whiter than any other part of the aorta. The aneurismal sac is represented after its contents had been removed. The aneurismal sac appears to have been formed by the uniform expansion of the coats of the aorta; whereas, according to Sennertus and Scarpa, an artery retains its natural size, and its coats are ruptured or corroded at a certain place, and seem included within, and to pass through, the sac, which is formed in consequence of the effusion of blood under the cellular sheath, or any other membrane which covers the ruptured or corroded coats of the artery.

The coats of this sac are of unusual thickness. The inner surface of the sac is irregular, owing to the adhesion of several small portions of coagulable lymph to it. In consequence of the pressure of the aneurism upon two of the lumbar vertebrae, these were found to be in a carious state.

There was no pulsation perceptible in any part of the back during the life of the patient; and it may be remarked, that after even a very large aneurism of the abdominal aorta has been of long continuance, pulsation is scarcely to be perceived in any part of the tumour. This circumstance occurred in a case of a very large aneurism of the aorta I had occasion to meet with, so that a medical gentleman mistook the nature of the disease. He supposed the tumour in the loins to be occasioned by a collection of pus, and proposed thrusting a lancet into it, to give a free discharge to the pus.

XI. XI. Point out probes put into the common iliac arteries, which, in this case, were considerably contracted.

MIDWIFERY.

History of an uncommon Case of Laborious Parturition. By Thomas Barnes, M. D., Physician to the Carlisle Dispensary and Fever Hospital, Member of the Royal College of Surgeons, London, and of the Royal Medical Society of Edinburgh, &c. Communicated by Dr Hamilton, Professor of Midwifery in the University of Edinburgh.

Mary Atkinson, æt. 42, the mother of eight children, supposed herself to be in labour (at the ordinary period) on the 2d of August 1825, and sent for the midwife whom she had engaged to attend her. The labour-pains, however, did not become regular nor forcing, and she lingered on till the 6th, when Mr Anderson, surgeon in this place, was requested to visit her. He was told that the liquor amnii had been dribbling off for some time, and that the pains were still irregular. When he examined per vaginam he could not feel the os uteri, though the pelvis seemed filled up by a bulky substance, like the head of the infant included within the womb. He directed an opiate draught.

At two of the morning of the 7th he was again sent for, and on again instituting a most minute investigation, he still could feel nothing like the os uteri, but he could distinguish accurately the enlarged uterus through the parietes of the abdomen. After waiting with the patient for three hours, during which the pains were occasionally pretty strong, he called to request my attendance. On our way to Mrs Atkinson's house we accidentally met Dr Hamilton, Professor of Midwifery in the University of Edinburgh, who was passing through Carlisle on private business, and on mentioning the case to him (as old pupils), he conjectured that the os uteri might be forced back towards the sacrum, while the anterior part of the cervix uteri was pushed down by the infant's head, in front of the pelvis, several instances of which had fallen under his notice; and he suggested, that we should carry up the finger along the posterior surface of the vagina, as high as we could, without occasioning pain.

Notwithstanding the most careful examination, however, we were unable to ascertain the precise situation of the os uteri, and we could not feel any part of the infant. Under those circumstances, we agreed to request a visit from Dr Hamilton, which he readily paid. When he had examined in the usual way, he passed his right hand along the symphysis of the pubis in front of the bulky substances, which nearly filled the pelvis. He found the uterus completely open, and that the right shoulder

of the infant presented; and, therefore, he endeavoured to bring down the feet, but when he reached the navel string, it proved to be quite flaccid, and at the same time the uterus seemed strongly contracted around the ilia of the fetus. He immediately abandoned his first intention, as he considered that, since the infant was dead, the operation of embryulcia could be performed with infinitely more safety to the mother than that of turning. With this view he pushed back the shoulder, and brought the head to present, which Mr Anderson and I ascertained. It appeared, that the obstacle to delivery was a large tumour situated between the rectum and the upper part of the vagina, though its precise nature could not at that time be determined.

As the urgency of Dr Hamilton's engagements prevented his remaining till the delivery should be completed, the duty of performing the operation devolved upon Mr Anderson and myself. After encountering considerable resistance, we succeeded in extracting the infant. The placenta followed in due time, and the patient was left in a more favourable situation than might have been expected. For the first fortnight her recovery seemed precarious, having occasional feverish attacks, and discharging a puriform matter per vaginam. But between three and four weeks after delivery, she was so far recovered as to be able to walk about the house, and at that time we discontinued our attendance, considering her to be convalescent.

In October following, viz. about ten weeks after her confinement, Mrs Atkinson had an attack of cholera, which at that time prevailed extensively in this city and neighbourhood, and she sunk in a few days. On the 24th of October, the day after her death, the body was opened, and the following appearances were seen.

The colon, and some of the small intestines, were slightly red. The fundus of the uterus, the ovaria, and the Fallopian tubes appeared healthy. A tumour as large as the head of a fetus, at the full time, occupied the pelvis. It was seated at the neck of the uterus, to which, and to the vagina, it was firmly adhering. The uterus, tumour, and vagina were removed, in order that we might examine them more carefully. The tumour was covered with a firm and strong membranous sac, and it was attached to the posterior part of the cervix and os uteri, and corresponding upper part of the vagina. It was in contact with the rectum, but did not adhere to it. The surface of its superior part was uneven and lobulated, of a dark red colour, as was also the lining membrane of the uterus, and in appearance it resembled the external surface of an inflamed lung. Its inferior part was of a lighter colour, round, and perfectly smooth. When cut into, its internal structure was cartilaginous, being in

some places more dense than in others, and intersected with strong ligamentous fibres, similar to what are seen in scirrhous mamma.

Instances of laborious labour, occasioned by excrescences within the cavity of the pelvis, have been recorded by Monsieur Baudelocque, Mr Park of Liverpool, Dr Merriman of London, and other eminent practitioners; but it does not appear that, in the cases hitherto published, there was any difficulty in distinguishing the os uteri. That being the peculiarity in Mary Atkinson's case, Mr Anderson and I have thought that it might be useful to the profession to give the above detail of the circumstances.

On reflecting on this case, it has occurred to us as a rule worth suggesting, that, wherever the os uteri cannot be distinguished in the ordinary way, while there is certain evidence of the woman being pregnant and in labour, the hand should be cautiously introduced into the vagina, for the purpose of making the examination with more accuracy, and that it should be passed up, in the first place, along the symphysis pubis, and then, if no opening into the uterus be discovered, along the hollow of the sacrum. Dr Hamilton was accustomed, when Mr Anderson and I attended his lectures, to mention a case which he had seen in 1806. The patient was actually in labour of her first child, though the vagina formed a complete cul de sac through which no part of the uterus could be distinguished; but, on examining per anum, he plainly distinguished the head of the infant pressing into the pelvis during every pain. It turned out that the upper part of the vagina, throughout its whole circumference, had cohered strongly; and, on cutting it through, to the depth of at least three-fourths of an inch, the delivery was safely accomplished, and the patient, since that time, has had a family without difficulty.

Observations on Dysmenorrhea. By William Campbell, M. D. Fellow of the Royal College of Surgeons, and Lecturer on Midwifery, &c. &c. &c. Edinburgh.

"Non faciunt solùm artes magnas qui inventis de illis loqui satagunt: sed illi quoque qui, quidquid in unâquâque verè inest, vel curiosum vel historicum, vel novum repertum, dare valent."

Diseases of the Uterine System, from the importance of the organs involved, have in all ages commanded the particular attention of practitioners. The accuracy with which many of these affections are described in the earliest records of medical

practice, sufficiently confirms this position. There is no system of organs whose functional derangements are succeeded by a more numerous and distressing train of complaints than those of the uterus, which led Democritus, not unaptly, to declare his sentiments on this subject as follows : " Huic autem vicina, mater puerorum, vehemens illud malum, infinitarum ærumnarum in muliere causa, uterus ipse latitat *."

Dysmenorrhœa *is the most harassing of all these complaints.* In many instances this condition of the menses is coeval with their primary appearance; in other cases, the secretion shews itself from the first with scarcely any pain, and for many months, or even years, continues to recur in the most natural manner. After some time, however, the duration of which is various, the sufferings of the patient progressively increase, and a state of excessive pain precedes and accompanies every recurrence of the effusion. This affection, though limited by Moschion and others †, almost exclusively to the unmarried, is occasionally also met with among matrons. The Father of Medicine merely alludes to it in his book *De Virginibus*, but he makes particular mention of it in his works *De Sterilibus, et Morbis Muliebribus* ‡. Of the unmarried who are most liable to this functional derangement, we may particularize females strongly stamped with appearances indicative of the various modifications of struma, more especially phthisis; individuals of originally feeble stamina; those of exhausted bodily strength from previous disease, long continued mental distress, or laborious occupation in an impure atmosphere. In this list we must include persons of a plethoric habit of body, those of acute feelings, and such as follow a sedentary occupation.

Some modern writers consider painful and scanty secretion as conditions of the catamenia, which generally coexist §, but this is diametrically opposite to my own observation, and is even denied by an author of the sevententh century, who says : " At non omne stillicidium est cum dolore, nec semper dolor cum stillicidio. Interdum enim menses suo tempore et copiosè, sed difficulter et cum labore erumpunt ‖." Cases are frequently met with in practice where the menses, though of the usual quantity and duration, are, nevertheless, secreted with severe pain; while, on the other hand, many instances occur where the secretion is so limited that the only evidence we have of an individual being under its influence, is a mere show, or a few in-

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* Democritus, Epist. xxiii.

† Moschion, cap. ii. Sebizius Man. p. 1564.

‡ Hippocrat. Morb. Mul. lib. ii. sect. 2. Lib. de Sterilib.

§ Denman and Burns. ‖ Primrosius, lib. i. cap. 4.

significant stains on the patient's linen, yet it is unattended by any considerable degree of suffering. It may certainly be admitted, that diminished, is oftener accompanied with great uneasiness than copious menstruation; but assuredly, *pain is not the invariable attendant of scanty secretion.* Most females have the catamenia with such regularity, that they can foretel the very day on which they are to be indisposed; but when the expected period is at all protracted, even for a few days, it is sure to be preceded or accompanied by unusual pain.

Many of the symptoms of this functional derangement resemble those of suppression of the catamenia, of which dysmenorrhoea, more especially when the secretion is limited in quantity, may, in many instances, be viewed as the primary stage. The pain, which is the source of incredible torture, is referred chiefly to the hypogastric region; thence it extends particularly to the sacral portion of the spine, to the loins, groins, and along the back part of the thighs. The intestines and urinary organs participate in the derangement, as appears from the presence of obstinate constipation and retention of urine. In many females these excruciating sensations precede the menstrual discharge by a day or two, in other cases they accompany it; but whether as precursors or concomitants, the severity of the patient's sufferings are indescribable. Occasionally these symptoms are ushered in by one or two rigors, or a feeling of chilliness of several hours duration. To the foregoing phenomena succeed an intolerable headache, deep seated pain in the eyes, occiput, and, in the course of the region of the cervical spine, which, with frequent syncope, and the most violent efforts to vomit, completely incapacitate the sufferer from the most trifling domestic occupation, and compel her to remain in bed for days together. Where these complaints precede menstruation they are more or less mitigated when this effusion declares itself, and more especially when it is of the natural quantity; but when they accompany the secretion, they continue for two or three days, or subside when it ceases. The matter rejected from the stomach, in some of those cases, does not consist of the ordinary contents of this organ; sometimes the vomiting it resembles haematemesis. In 1819 and 1820, I met with two cases of this nature; both the ladies were unmarried, the one about thirty-five years of age, rather full; the other about twenty-four years, spare, but plethoric. In the younger patient, though the catamenia were always copious, her sufferings were very great at each period; and, contrary to what is insinuated by Celsus in the following passage, she vomited a larger quantity of blood than the elder lady, in whom the secretion was remarkably sparing: "Sæpe fœminæ, quibus sanguis per menstrua non respondet, hunc expuunt *." In the patients al-

* Liber iv. cap. 4.

luded to, the catamenia and hematemesis appeared at the same time, and regularly ceased together. The function of digestion was greatly impaired in both cases, especially for some days before the menses appeared. The younger lady is now the mother of a family, which change has been followed by the complete removal of all her complaints. The elder patient still continues indisposed: occasionally she has no vomiting of blood; but when this is the case, she is subject to an obstinate diarrhoea. Hippocrates alludes to patients in whom a vomiting of blood seemed to supply the place of the catamenia *. In M. Planque's translation of Van der Wiel, some cases of a similar nature are related. In one of these, a servant to the father of this author, a large quantity of blood was brought up at each menstrual period, yet the individual suffered scarcely any thing. The same writer also mentions the case of a married lady, aged forty, in whom, for about two years, the menses were suppressed, and their place was supplied by a hematemesis, which caused her severe suffering †.

Dysmenorrhea is sometimes attended, for a day or two previous to any other mark of indisposition, particularly in spare irritable females, with feelings in the abdomen and pelvis, which equal in violence, and imitate completely in sensation, the most powerful parturient efforts. This straining, in some cases, is only present to a slight extent, for a day or two, until the menses appear, when it becomes violent; while, in other instances, its approach and cessation keep pace with the catamenia. This variety of diseased menstruation is frequently attended with an unpleasant rumbling noise in the intestinal canal, which is sometimes so obvious as to compel the sufferer to confine herself to her apartment.

We sometimes find dysmenorrhea complicated with other organic affections, such as phthisis and hepatitis. In many instances these precede the uterine derangement; in others, they supervene to it. There is not a more frequent complaint attendant on painful menstruation than an obtuse, or an acute pain in the region of the liver, with flavid colour of the countenance. From the peculiarly excruciating sufferings of the patient, and consequent general excitement, the vascular and nervous systems present considerable evidences of derangement. Within a few days of the period when the secretion should appear, the patient is either peevish, watchful, and most susceptible of impression; or there is universal torpor, indicated by want of animation, indifference towards surrounding objects, even of the most interesting character, and an unconquerable aversion from exercise. The countenance is flushed, the temporal arteries

* De Mulieb. Morb. lib. iii. cap. 5.

† Tom. ii. pag. 188.

beat with unusual activity, the heat of the body increased, thirst is troublesome, and the paroxysm is closed by general perspiration.

Dysmenorrhea presents other peculiarities besides those already noticed. With the secretion coagula are sometimes extruded; of which phenomenon, perhaps, one explanation only can be offered, viz. during the violent action of the uterus the extremity of one or more vessels may be ruptured or forced, and pure blood is thrown out. In other instances, there is in the uterus of some females, married as well as unmarried, a disposition during the interval between the menstrual periods, to the formation of a membrane, of which the faithful Morgagni, though not the discoverer, appears, however, to have been the first who offered a proper description. It would seem, by the following passage from his writings, that the existence of the production in question was not unknown to Ætius and Platerus. "Habes quæ initio, et postea fuerat mea de hoc morbo opinio: qui in eo quidem mihi, Plateri aliorumque observationum, vel Ætio olim non incognitarum, minime novus videbatur, quod stato menstruorum tempore cum his concretio aliqua, idque diutius ejiceretur; sed in eo, quod concretio singulari ista forma esset, quam apud alios legisse non memini; quin Platerum memini diserte scripsisse, *nullam* se *cavitatem* in sua *potuisse cognoscere* *." Although, from some manifestations in the writings of Ætius and Platerus, it may be admitted that these writers were not ignorant of the existence of this membrane; yet, their account of it is so brief and unintelligible, that it is doubtful whether their allusions refer to it or to a totally different production †. Of the moderns, Dr Denman offers the best description of this membrane; it corresponds almost verbatim with that given by Morgagni, but with whose article on this subject Dr Denman does not appear to have been acquainted ‡. Morgagni, in speaking on this subject, says: "Tunc enim abortis partus doloribus, et primo, aut altero die, sanguinis cursu incipiente vel uberius quam pro consuetudine effluentis, in medio fere eo cursu ex utero ejiciebatur corpus, ut apparebat, membraneum, idque ea forma, eaque magnitudine quæ triangulari uteri caveæ satis responderent, modice convexum exterius, qua facie erat inæquale, nec sine plurimis filamentis, quæ ab sedibus ad quas adhæsissent, abrupta esse videbantur, cavum autem interius qua facie erat læve, et madidum quasi ab aqueo humore, quem antea continuisset, in exitu autem per amplum foramen, quod in uno erat angulorum, a distractione facile apertum, emisisset."

The productions so accurately described by Morgagni must be

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* Epist. xlviii. Art. xii.

† Ætius Tetrabil. iv., Serm. iv. cap. c. Platerus, Molæ Excretiones.

‡ Introduction to Midwifery, edit. 5. p. 161.

more or less familiar to practitioners. I have witnessed many, and have several of them in my possession; but, in my whole practice, I cannot call to my remembrance a single instance, where they were furnished by unmarried females. They have invariably been produced by matrons, and always after having missed one or two menstrual periods. I never knew any thing similar to the membrane described by Morgagni, to be thrown off in the unmarried. In them we may often observe small thin portions of something of a cutaneous texture, seldom larger than a finger nail; at other times, what is ejected has the appearance of distinct fibres. In the case of a young married lady, at present under my care for dysmenorrhea, where the secretion is *irregular*, *copious*, and attended with *coagula*; these fragments are regularly expelled. In her the most violent pain precedes the effusion by two days; in four days from the commencement of her sufferings, this membranous production appears; and then all her sufferings gradually decline. The extrusion of this cutaneous-like texture takes place during the bearing down efforts,—seldom earlier than twenty-four hours after the appearance of the catamenia; but more generally towards the middle of the menstrual period.

It is said that sterility is an invariable attendant in all cases where these productions are evolved; and although we cannot set bounds to the operations of nature, yet the case already quoted from Morgagni is, so far as I am aware, the only one in refutation of this assertion. It must be familiar to the profession, that, when a female passes but one period even, without voiding these productions, conception may immediately afterwards take place, and this is a fact which I have repeatedly known to occur in women recently married; and which, no doubt, has often led to a most erroneous opinion, viz. that matrimony would, in such cases, invariably effect a salutary change, as it is well known this morbid condition of the catamenia ceases when an individual has once become a mother. Young females are often met with, who, for a long period before marriage, years even, and for many months after this change, have been passing shining substances; but they have no sooner missed a period without doing so, generally speaking, than impregnation has been the result.

The formation of the membrane in question may be accounted for on the following principle. When the catamenia are prematurely suppressed, whether from exposure to cold, or any other cause, calculated to have this effect, congestion and ultimate excitement of the villous membrane lining the uterus are the results. The extremities of the secerning vessels, terminating on this villous lining, suffer a degree of contraction, and give rise, from their having become less permeable, to excruciating pain at the ensuing menstrual period. From the resist-

ance which must be thus opposed to the transmission of the catamenia, increased action of the capillary vessels ensues, followed by an exudation of coagulable lymph, which is converted into a crust or membrane lining the inner surface of the uterus, and constitutes another impediment to the flow of the secretion, by blocking up the mouths of the secerning vessels. When the catamenia are again about to manifest themselves, the uterus is excited into violent action to accomplish the detachment of the new membrane, the subsequent ejection of which explains the nature of the cutaneous like fragments observed in the catamenia. By the frequent repetition of these sufferings, a thickening and chronic state of excitement of the inner membrane of the uterus is produced, which must act as a permanent obstruction to the free transmission of the menses.

There are many other causes which conduce to this condition of the catamenia. Some may be considered constitutional, since they seem to operate previously to the evolution of the menses; they act on the uterine system indirectly through the medium of other organs. The other causes are acquired, and exert their influence, in the first instance, on the genital organs alone. Under the first head of causes may be specified, more particularly, affections of the lungs and liver; and sometimes diseases of other organs, such as the pancreas and kidneys. In cases of young females, in whom, about the age of puberty, there is a tendency of one or more of these organs to take on some morbid change, the uterus and ovaria frequently, in consequence of the determination to the diseased organs, are impeded in their developement, their vascularity less, and their secerning vessels smaller and less permeable. Hence, in such cases, the cause of limited or diminished secretion; and hence, also, the source of pain from the uterine arteries being contracted in their caliber, and the resistance which they must consequently oppose to the exudation of the menstrual effusion. In the winter of 1820–1, I was consulted in the case of J. C. æt. 19, an unmarried female, of spare habit and delicate constitution, for pains in the abdomen, and obstinate constipation. The catamenia had never appeared but once, and then merely a scanty show, which state was ascribed to her having been for several years brought up in a sedentary occupation in learning to make straw-hats. At this time, she was recommended some of the ordinary remedies, and matrimony, should an opportunity offer. I heard no more of her until June 1823, when I was again requested by Mr Christie, surgeon, to visit her. I was informed she had been married four months, that, for some little time after marriage, her health continued as favourable as it had been at any former period of her life, but that it afterwards declined daily. She complained of incessant pain in the loins, sacrum and pubes;

a diarrhea was almost always present; the urine was frequently voided in small quantities of a milky appearance; she had rigors every evening, with a feeling of great coldness, though to another person her skin felt warm. The menses had not been seen except three times: they were always attended with great pain, and so sparing in quantity, that the patient's linens were but slightly tinctured by them. From the period of her second application, until the 3d of July following, a variety of remedies were used. She was once bled at the arm to ℥xii.; twelve leeches were applied to the groins; some aromatics were ordered for her; the arsenical solution was given, but it disagreed with her, and she had occasional laxatives. Some days before dissolution, an examination was made *per vaginam;* but, with the exception of a general narrowness of the pelvis, and a diminutive size, and unusual hardness of the cervix uteri, no further information was elicited. On the 4th of July, the day after her decease, she was examined by Mr Lizars, in presence of Professor Duncan *junior*, several other gentlemen, and myself. The arteries of the small intestines were minutely injected; the uterus and ovaria were not only of much firmer texture, but considerably smaller than usual; the urinary bladder was contracted, much thickened, greatly inflamed, and cancerous; the ureters were traced towards their origin, and appeared as large as the small intestines of a young child; the kidneys were much diseased; when an attempt was made to disengage the left from its connections, it burst, and a large quantity of pus escaped; when its internal structure was examined, the infundibula appeared to have been converted into sacs of matter; and the substance of the kidney was scirrhous at many points. The right kidney was not so much diseased as the left; but its infundibula formed pouches of pus. The liver and spleen were enlarged. The pelvis, in all its principal diameters, was smaller, by half an inch, than one of the usual standard.

In April 1824, I visited, at the request of Mr Craig, surgeon, now of Ratho, a young unmarried female, aged 19, of a spare strumous habit, in whom the catamenia were, from the period of their first evolution, scanty, irregular in appearance, and attended with pain. She applied to Mr Craig, about two years previously, for an enlargement of one of the cervical glands, and at that time she was labouring under general cachexia. I saw her but a few times before she died; the face and lower extremities, for two or three days before dissolution, having the appearance of being edematous. On examination after death, the uterus and ovaria seemed smaller and firmer than they are generally observed in a state of health; the liver presented a pale yellow aspect, and was greatly enlarged; and the pancreas formed a mass of nearly four pounds weight; it was

very firm throughout, and of a cartilaginous texture at many points.

Bonetus relates many cases where diseases of other organs produced either dysmenorrhea or amenorrhea *.

Organic lesion, on the other hand, not unfrequently results from diminished or obstructed menstruation; and, it would seem that no organ is more susceptible of disease from these causes than the liver. On 6th May 1823, I was requested by Mr Kennedy, surgeon, to visit a young lady, aged 22, unmarried, who was labouring under severe irritability of stomach. She was naturally of a full plethoric habit; had for several years suffered much at the menstrual period, though the secretion was by no means scanty. When I saw her, she had troublesome thirst, and short dry cough; and the irritability of stomach was so severe, that a spoonful of fluid occasioned the most violent efforts to vomit. She died at the end of a week from the time I first visited her. There was nothing remarkable in the structure of the uterus; it was of the natural size. The left ovarium was smaller than usual; the right was much larger than a walnut, and contained a quantity of aqueous fluid. The liver formed a pale yellow mass, about one-half larger than its natural size; the spleen was also much larger than natural, and both organs felt remarkably firm in their texture.

Under the head of acquired causes, we may specify general or local debility, exposure to cold, continence, excess in venery, abortions, and passions of the mind. Dysmenorrhea and scanty menstruation may be induced in the unmarried, by causes which, in matrons, have little or no influence. In married females, we find the uterus, in most instances, perform its functions regularly to the last, even under circumstances of great prostration of the system, of which we have a good illustration in phthisis. In the unmarried, the uterine system is much more susceptible of functional derangement. This condition of the catamenia does not often result from debility of the uterus alone; it far more frequently happens in consequence of this organ sympathizing with the state of the general system. The system may be reduced by disease requiring long confinement, by sedentary occupation, and more particularly when the individual breathes an impure atmosphere, and subsists on unwholesome nourishment. In the autumn of 1819, I witnessed the examination of a young woman, aged 19, who died from anasarca. She resided in an apartment under the level of the street, where she had been long confined from *necrosis* of the right *tibia*. Her catamenia became gradually diminished in quantity, and this led to the disease which was the more immediate

* Anatomia Practica, tom. ii. p. 1347.

cause of death. How often do we find diseased menstruation in young females, who pass the greater part of the twenty-four hours in the vitiated atmosphere of ill ventilated manufactories, or even in well aired warerooms, although, for the first few years after the manifestation of the secretion, it was of the natural quantity, and elaborated without pain!

Exposure to cold, either in consequence of light clothing damp feet, or the mere immersion of the hands in cold water, while the individual is under the influence of the catamenia, has often been known to lead to premature suppression of the secretion, and severe pain at the next period, unless the patient receive timely and proper attention. The pain must be ascribed to spasm or constriction of the extreme vessels; whereby, as formerly explained, their extremities are rendered less permeable.

Widows who, during their conjugal life, have enjoyed perfect health, often become gradually affected with much pain at every menstrual period, and frequently the secretion itself is diminished in quantity, or ultimately suppressed. Continence, therefore, may be supposed to act on the system in two ways. In the first place, it leads to irritation of the genital organs, from the sudden subtraction of a peculiar stimulus; and, in the second place, to insensibility and torpor, the usual results of protracted irritation. Excess in venery is a frequent cause of painful and scanty menstruation in recently married females, and its influence on the uterine system is similar to that of continence. From too frequent intercourse, a great degree of irritation is first induced, to which torpor or exhaustion succeeds, and hence diminished secretion. Individuals of this character continue barren for a long period of years.

Of all causes to the superinduction of dysmenorrhea, cases resulting from abortion are the most obstinate; for, independent of individuals suffering severely at each menstrual period, they continue barren for a long course of years. When the secretion reappears, after the abortion, it is both sparing and painful. After some time, the pain is diminished, and the catamenia also become still more limited in quantity; at last both cease entirely; and the place of the menses is supplied by a profuse and continual leucorrhea. I have been consulted in many cases of this character, and have at present under my care a patient who, between fourteen and fifteen years ago, aborted when in the sixth month of her second pregnancy, in consequence of her having tumbled down a flight of steps. Ever since this accident, her catamenia have been very sparing, and secreted with great pain, although very regular in their appearance. She is now thirty-five years of age, and has not conceived since the date of the abortion; and she is the only matron I have met with, who,

during the menstrual period, expels substances of a cutaneous texture. She now labours under scirrhus of the uterus, and still continues to pass shining substances.

Dysmenorrhea is sometimes induced by passions of the mind, the elevating as well as the depressing kind. Eros, of the eleventh century, is among the first who makes particular mention of the influence of such causes; he observes, "Aliquando deficiunt menstrua ex nimio dolore, vel ira, vel motu, vel timore." Baudelocque relates a most extraordinary fact, in reference to the influence of the passions:—"On se souvient encore à Paris des êvénemens facheux qui furent la suite de l'explosion de la Plaine de Grenelle au commencement de la Revolution. Dans les huits premiers jours qui la suivirent, M. B. fut appelé pour donner des soins a soixante-deux femmes atteintes des pertes ou menacées d'avortement †." Diminished and painful secretion may be caused by the elevating passions exerting their influence on the uterus, through the medium of the nervous system, by producing spasm or constriction of the secerning vessels of this organ, and consequent irritation; or they may affect the uterus in another way, that is, by first occasioning a determination and consequent disease of other organs of debilitated constitution, such as the brain, lungs, or liver. On the 27th of December 1825, I was called to a widow lady, about forty-two years of age, of full habit, in whom, owing to some trivial domestic grievance, while she was under the influence of the catamenia, the effusion became suddenly checked. I found her quite delirious, and was informed in confidence by her niece, that she had repeatedly seen her in the same state. The mental aberration continued for five days; and, on the 7th January following, I left her in her usual state of health. The distressing passions, such as anxiety, fear, and grievances resulting from disappointments in life, must act on the uterus by producing diminished energy of the whole system.

In France, where the sex, I believe, surpass, or at least equal, those of *any other European country in freedom of thought and action, and in affability of manners*, they use, during the winter season, as a luxury, what, in my humble opinion, who have witnessed this indecent practice, may lead to diseased menstruation. This is a small earthen vessel, something like a flower-pot, filled with live cinders, which every lady has carefully placed under the lower part of her under garments, and even causes the servant to bring sometimes to church for her. And, while on this topic, it may be mentioned, that they have borrowed from the ancients a precept ‡, which, in former times, was resorted to as

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* Prologus, qui est de natura muliebri, et mensium fluxu.

† Gardien, vol. i. p. 334. ‡ Ibid. vol. i. p. 267.

a remedy; but which, from its too frequent use among the present generation, more especially in certain countries, may assuredly be considered as the cause of the evil. Some notion may be formed of the practice to which I allude, by the following passage from Eros, who says, " Aut fiat aliud pessarium in modum virgæ virilis," &c *.

From various manifestations throughout the writings ascribed to the Father of Medicine, and those of several other authors who flourished shortly after his time, it would appear that dysmenorrhea was by them viewed as a formidable affection. Hippocrates says, " Si quidem a natura pauci menses prodeunt, incurabilis est †". Galen observes, " Sin autem nimis oblæsæ sint, aut plane retentæ, nullum ejusmodi eas sanare potest ‡." Modern writers have entertained similar sentiments regarding the prognosis of this affection. Primrose says, " Malum grave est, curatu difficile, periculosum, nam febres, hydropem, mortemque, inferre potest," &c. ||

For a few periods after the primary appearance of the menses, the quantity secreted is, in many instances, limited, and accompanied with pain; but this condition is generally exchanged for a more copious and less painful state of this function. Where this change, however, does not take place, and where the individual can be said to have suffered from painful and scanty menstruation from the first, I should think the experience of every practitioner must tend to confirm the sentiments of Hippocrates. Equally obstinate have I found this functional derangement, when complicated with other organic affections, as those of the lungs, liver, &c. I have never, except in one instance, succeeded in bringing about a salutary change, when the characters of phthisis have been strongly marked. The patient in question was a lady, aged about twenty-five years, tall, narrow chested, slightly disposed to asthma, with pain in the region of the liver; dark hair and dark eyes, with a spare delicate habit of body. She was about seven months married when I was consulted in the spring of 1819. She informed me that, for a series of years previously, she had suffered severely, at every period, from painful and scanty secretion; and that, at one time, she had been bled and blistered, upon the supposition of her having diseased liver. Six weeks from the time I first saw her, she became pregnant; and she is now, I believe, the mother of five children. I did not attend her as an accoucheur, but I have reason to know that, from the time of her first pregnancy, she has ceased to have pain during her monthly indispositions. My opinion has also been occasionally asked in the case of an unmarried lady,

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* Liber muliebrum, cap. i.

† Liber de Sterilibus.

‡ Liber x. cap. 5.

|| Liber i. cap. 8.

aged about thirty-five years, under circumstances somewhat similar to the last case. She has all her life had painful, scanty, and irregular menstruation. Her catamenia have often disappeared for months together; on their return they have exhibited themselves as mere stains on her linen; and, although she has been thought, more than once, to be affected with diseased liver, and been repeatedly threatened with pulmonic affections, yet she has struggled through. She enjoys, at this moment, a great share of good health; and the catamenia still continue scanty and irregular, but not painful. In cases like this last, I should be inclined to ascribe the want of due secretion to some imperfection or want of development of the genital organs, especially the ovaria.

Cases of diseased menstruation supervening to abortion, though very obstinate and vexatious, from the circumstance of their being invariably attended with sterility, are not, however, of fatal tendency, unless scirrhus uteri supervene. My practice, in such cases, with a solitary exception, of which I shall speak presently, has been uniformly unsuccessful.

When dysmenorrhea supervenes to organic affections of other parts, such examples are often unfavourable; and cases of long standing, under most circumstances, are extremely obstinate.

Painful but copious menstruation is easily remediable; recent cases much more so than examples of a chronic character; and, when dysmenorrhea appears to have been accessory to the superinduction of affections of other organs, such examples are more tractable than those in which diseases of other parts precede derangement of the catamenia.

Dysmenorrhea may terminate in suppression of the menses, phthisis, hepatitis, anasarca, and cancer uteri.

Although there are certain disordered conditions of the catamenia, which require prompt and serious attention, yet there are others where the powers of nature are alone sufficient; but of this the sex themselves, and some members of the profession even, cannot be convinced, as the following case will show. In 1822, a young lady, nineteen years of age, of tall stature, healthy constitution, and void of every complaint except a voracious appetite, was, by the advice of a surgeon in high estimation, *first*, heartily ducked, once daily, on the sea-beach for a summer season, to strengthen her; *secondly*, stewed in a warm-bath for several months, to relax her; and, *thirdly*, made to swallow for some time daily, such a proportion of the carbonate of iron, as would almost have led one to think that she was compelled to use it as a substitute for oat-meal. Why all this professional purgatory, because the lady's catamenia had not made their appearance? To show that the lady had an excellent constitution, and could therefore require no medicines, she withstood these violent at-

tempts on her person, without any injury to her health. In the variety of functional derangement under consideration, however, the sufferings of the patient are too frequently so excruciating as to demand immediate and powerful means of relief.

In the treatment of this affection, the object must be; *first*, to diminish pain and local irritation during the presence of the catamenia; and, *secondly*, in the interval between the periods, to adopt such means as are calculated to remove that condition of the uterine or general system on which this functional derangement depends. It is scarcely necessary to observe, for it is a circumstance which must be obvious to every one, that this is a complaint in which the patient herself can greatly promote our views by avoiding the exciting causes; and this, in cases arising from particular circumstances, it may be necessary to represent to the sufferer through the medium of a third person.

On the immediate approach of pain, from two to four leeches should be applied to each groin, and the effusion from their bites promoted by means of warm fomentations. The ancients recommended, among many other remedies, that steam should be directed into the vagina; and the moderns have been in the habit of using injections of warm water, or the hip warm-bath, and both modes of fomenting the parts have no doubt been found most beneficial in many cases; but, as might be expected, there is frequently great opposition to the practice. In a certain description of patients, however, particularly those of a spare irritable habit of body, this need not be regretted, for in them the sufferings are aggravated by warm fomentations; whereas in full plethoric females, the practice invariably affords relief. The tinctures of opium and hyoscyamus are administered to diminish pain; but the former in some cases must be hurtful, and the latter so inert as to be next to useless. In cases of irritability or torpor of the nervous system, and of those of scanty menstruation, opium, from its possessing the power of increasing these conditions of the nervous system, and of diminishing the secretions, would be injurious. For relieving pain, I have found camphor in ℥ss doses very effectual; and with this medicine, I have been in the habit of conjoining as an enema in cases of severe pain, a solution of ℥ij of assafoetida in ℥viij of warm water. These means should be repeated when the pain becomes urgent, or whenever the paroxysm is renewed. When the catamenia begin to cease, about 8 oz. of warm water should be thrown into the vagina, three or four times daily, with a view to support the secretion and render the secerning vessels more pervious. It must be on the principle of the uterine vessels being rendered more permeable, and the vascularity of the uterus being increased, that dysmenorrhea ceases to exist after an individual has conceived, and been once delivered at the full time.

The cases in which spasm most generally constitutes the origin of pain, are those of individuals of a full plethoric habit, and females in whom the catamenia, though attended with severe suffering, are almost always sufficiently copious. In the absence of the secretion, such patients should clothe warmly, use the hip warm-bath morning and evening for several days, antecedent to the appearance of the catamenia, refrain from violent exercise during the same period; and take every third or fourth day as an aperient, three or four grains of submur. hyd., followed in an hour after, by ʒiv. to ʒviij of the phos. sod., which will be found to act with great mildness. A gentle sudorific should be administered at bed-time, begun for two or three nights before, and continued during the menstrual period. The diet should be of the mildest nature. From ample opportunities, I have no hesitation in asserting, that the order of patients just described, are the only cases which can be benefited by matrimony. In all other examples, and more especially where there is disease of other organs besides that of the uterus, this new state of life has proved, as far as I have been able to ascertain, useless or injurious;—see case of J. C. page 100 of these observations.

In dysmenorrhea, produced by unusual irritation of the uterine system, as may be met with in recently married individuals, and after an abortion or premature labour, the conjugal embraces must be scrupulously avoided, as well as every other cause calculated in the slightest degree to occasion excitement of the genital organs. With the exception of the sexual intercourse, these examples must be treated exactly as the variety last spoken of.

When general debility, or prostration of the uterine system alone, or torpor of these organs, as it has been styled, appears to have produced this affection, such means are to be adopted as are calculated to recruit the powers of the system, or restore the vigour of the prostrate organs in particular. I may be accused of scepticism, or want of faith in the powers of some medicines, and this character I should certainly prefer to that of excessive credulity; but I must observe, that in patients under the particular circumstances of which I am now speaking, I have never derived much benefit from the medicinal stimuli of the mineral kingdom. Nay, in some cases, I have thought them injurious, with the exception of the mineral springs. Of the vegetable productions, I can speak much more favourably. From colombo in powder simply or combined with cinchona; the canella alba in a similar form; and an aqueous or a vinous infusion of gentian, quassia, or cinchona, I have seen much advantage accrue. To individuals of this character, a moderate proportion of claret or Madeira, may be allowed. With these means, there are several varieties

of exercise, which may be most advantageously conjoined, such as walking, riding, dancing, particularly that form of it termed waltzing; but excess in either should be carefully avoided. Patients of this description should be prevailed on to visit places of public entertainment, such as dancing assemblies, theatres, and some of the resorts for mineral waters. In some instances it has been thought that chronic cases have been much benefited by the sulphureous waters had alone, when all other remedies failed. But all circumstances considered, I must agree with those who think that the relief experienced by the patient must be ascribed more to travelling, change of air, scene, and society, than to the use of the waters. Frictions upon the hypogastric and sacral regions, and electricity, have been found useful. In cases of diminished action, whether local or general, I have found aloes, combined with assafoetida, the best aperient, exhibited in form of pills once in three days.

In cases occurring in strumous constitutions, and in those where, from there having been a paucity of the secretion from its first evolution, there is reason to apprehend a want of developement of the genital organs, the whole of the treatment in the last section is perfectly applicable. And although, to the best of my recollection, I cannot speak from personal observation, yet I am of opinion, owing to the profuse state of the catamenia in females living under the torrid zone, that, to the description of patients now considered, a residence in a warmer climate than ours, such as that in the South of France, or the Azores, would prove most beneficial.

I cannot conclude these cursory observations without noticing two new remedies, which the learned Dr Good has introduced into his chapter on *Paramenia difficilis*, in his justly celebrated work; I mean *Iodine* and *Ergot*. Of the former I know nothing except from report; and as, at present, it seems to be recommended chiefly by the junior members of the profession, who extol it as a remedy for almost all diseases, I must defer its exhibition until its virtues shall have been better determined. I can speak with greater confidence of the ergot, which I have exhibited in three cases. By Dr Good, the ergot is styled an Emmenagogue; but certainly it has no claim to be so denominated, since, as may be seen in Dr Hosack's observations on this medicine, as well as in the remarks of Dr Stearns on the same subject, in No. 20. of the American Medical Recorder, it has been found *not to promote, but rapidly to restrain, discharges of blood from the uterus, in the unimpregnated, gravid, and puerperal states.* Dr Hosack remarks, that in two of three cases where he administered the ergot during delivery, the patients had not conceived, when he published his remarks, though several years had elapsed; that, in one of *these two*, the catamenia were rendered scanty, and in the second entirely suppressed. Should future

experience prove, that the exhibition of this medicine will be attended with the complete suspension of the procreative function, as happened in Dr Hosack's two patients, it should certainly be proscribed, except in cases where there exists such serious organic lesion as shall preclude all hopes of the individual realizing the endearing promises of the conjugal union. One of the patients to whom I exhibited ergot is already alluded to in page 103 of these remarks, and the result certainly astonished all concerned. This woman sent to my friend Mr Lizars, when he was absent on professional duty in the country, and the charge of visiting his patients having devolved upon me, I called on her, and found her in the state already detailed. Considering her case irremediable, I left her under the care of Mr Adam Hope, who was then assisting Mr Lizars and myself. On the arrival of Mr Lizars he suggested the administration of the ergot; and the following are its mode of exhibition, progress, and result. On the 6th of October, she commenced to take ℥ss daily, of a decoction of ergot prepared as follows: ℞ Secale Cornutis ℥j, decoque in aquae ℥iv. ad dimidium, et cola. October 8th, no perceptible effect from the medicine; decoctum repet. 10th, Thought her pains slightly mitigated; remed. ut antea. 12th, Felt sensibly relieved; secale cornutis contin. 14th, Had no pain whatever; decoctum adhuc adhibet. She menstruated on the 16th, the day she expected to be indisposed. The secretion was more limited than formerly, but perfectly free from pain. This patient, from having been for four or five weeks confined to bed, is now able to sit up, and, to a great extent, attend her domestic concerns; and, except a slight bearing down *inclination*, while she is in an erect posture, with a sensation of weight in the pelvis, and inability to lie for any length of time on her back, she has no complaint.

Edinburgh,
4. Picardy Place,
October 31. 1826.

PATHOLOGY.

Remarks on the Subjects of Life and Organization. By J. Clendinning, M. D.

Part I.

THE promotion of knowledge is effected more immediately and manifestly by two classes of artists. Of those, one consists of such as with zeal, perseverance, inventiveness, boldness, and sagacity for their arms, take the lead in the field of investigation. It is for them, with discriminating taste, erudite touch, and mi-

croscopic eye, to examine every object. It is theirs to test and to analyze, to measure and to weigh. It is they that remove obstructions, surmount difficulties, discover unknown virtues, detect lurking mischief. The other class above alluded to comprehends those who, matured in wisdom by years devoted to attentive observation, "patient thought," and profound study of the records of experience, have gained deep insight into the ways and affections of nature; who have diligently watched her secret movements, and, undeceived by her involutions and disguises, have ascertained the direction of her retreat, and discovered the path to her recesses. It is for them to lay down the chart of science, to determine the boundaries of the known world, and, from lofty eminences, taking extensive surveys of yet unexplored regions, to point out the bearings of the inaccessible peak, ungrateful desert, impassable swamp, and open and fertile country. It is they that pronounce judgment on past discoveries, and shew the way to future. Such are the offices of the systematist or sage, and of the experimenter,—offices alike high and honourable, demanding great and various powers and attainments. These offices are best combined in one person, and we usually find them united; unhappily, however, not always in due proportion. Hence it is no doubt we so often find one individual ingenious and indefatigable in wringing from nature the confession of her secrets, but without proportionate quickness in apprehending the true meaning of her signs; and another slow and uninventive in her cross-examination, but intelligent and skilful to interpret her rudest and most artless expressions.

But the advancement of science is no slender or simple enterprize; nature is not only vast but likewise multiform. With a view, therefore, to the discovery of truth, an association of talents of various and different degrees becomes indispensable.

Besides, therefore, those above suggested, there are still other subordinate modes of contributing towards that great end. With the same ulterior view, the historian details in order the labours of scientifick industry, declares the ends she has had in contemplation, the difficulties she has had to surmount, the means she has employed, her failure or her success.

With the like intentions, the critick tests the labours of the artists by the rules of their arts; he points out the effect that should have been produced, compares it with the means employed, and with the actual result. He is thus enabled, in his easy chair, to deduce the conditions of success, and to detect the causes of failure, and to teach inexperience how to secure the one and to avoid the other, making history pregnant with instruction, and posterity wise at the expence of their predecessors.

It is given to few to discover new facts, and to fewer still to shew the way to discovery; but, as an historian, or as a critick, every one that will may contribute. Under these impressions, I hazard the following observations.

Much has been of late written respecting life and organization; they are subjects indeed with which speculation has at all times more or less occupied itself, and have furnished matter for some of the earliest hypotheses handed down to us. Nor can we wonder that that which is amongst the obvious characteristicks of the most elaborate of God's works, should have very early fixed the attention of the busy spirit of curiosity.

Our judgments are influenced by various causes; although, viewing the same subject from the same side, the decision of A may yet differ *toto cælo* from that of B, as daily experience exemplifies. What a variety of opinions, then, may we not expect to meet with amongst a host of speculators, of all sorts and degrees of temper, talent, learning, acumen, candour and industry, on a subject such as life, so difficult, so undefined, in its scope so extensive, yet so minute in its details. We find, accordingly, that the hypotheses that have been published relative to life and organization amount to a very considerable number. Dr Barclay, who professes to give the opinions of those only "who have been the first, or among the first, to suggest opinions, or who have acquired the highest reputation in supporting them," enumerates some dozens, into the separate analysis of which he thinks it unnecessary to enter at length.

Now, on glancing over those speculations, we perceive that they are readily divisible into at least three classes. The first contains such as ascribe life and organization to the agency of some intelligent substance; the second class comprehends those that ascribe vitality to certain unintelligent substances, or to certain combinations of such; the third contains such as ascribe life and organization to certain abstractions, or nominal entities.

It thus appears, admitting for the present that examples of each of these classes exist, that, neglecting minor differences, we have, in reply to the question, What is the cause of life and organization? not less than three sets of answers, of composition and character essentially different.

How is it, then, that different respondents can, to a question of which they understand the words, give such apparently conflicting replies? How else than by taking the same words in different senses? With the explanation of this I shall close the present communication.

In scientifick writings, the word *cause* has various meanings. The Stagyrite enumerated four kinds of causes or meanings of the word cause; substituting for his formal cause, which I re-

ject, another to be presently mentioned, and preserving, as far as possible, unbroken his quaternion.

We have four classes of causes, viz. 1*st*, Efficient causes, or intelligent substances considered as acting; 2*d*, Material or instrumental causes, or substances intelligent or unintelligent, considered as constituent elements of any compound, or necessary condition of any effect or state; 3*d*, Final causes, or any results or states considered as mediate and premeditated effects of certain acts of intelligent substances. Final cause is usually equivalent to end, object, use or motive. 4*th*, Premonitory causes (unfailing signs) or uniform antecedents of Hume and Brown.

In common life, we often call certain events causes of certain other subsequent events. Physicians also frequently use the word cause with like latitude. The Stahlian theory of sympathy, lately ably explained and enforced by the judicious Professor Alison, affords, I think, an example of this. In what way can a mental state, as a sensation or perception, be a productive cause of the new physical state of a heart palpitating from passion, or quiescent in syncope? I rather think in none. I can, however, easily conceive a connection in time, considering them as effects of some common cause or causes, and produced, not contemporaneously, but consecutively; so that one may serve as a harbinger, a forewarning sign, or premonitory cause, of the other. We have another example, I think,—the case of a pin applied to the living heart. In this case, we have contraction of the muscle: now, since efficient causation is out of the question, and since I see not that constituent or physical causation has place; for a penknife, thorn, bone, bristle, &c. are nearly equally efficacious in occasioning contraction, I therefore conclude, that, in this case, some links in the chain of causes escape me; but, finding the concatenation in time uniform, I am content, *ad interim*, and provisionally, to bestow the title of cause on that state (contact of the pin and heart), or event (application of the pin to the heart), which, uniformly preceding a certain state or effect (contraction), forewarns the observer of its approach; and the more so, that the knowledge of such connection in time, in our ignorance of the constituent or physical causes, arms us with no inconsiderable power, and is, therefore, of no trivial utility.

This much in explanation of the phrase Premonitory Cause.

Now, these causes are divisible into two classes. The two former are substantive entities, the two latter nominal only; the two former, therefore, only productive causes, the two latter unproductive. But of this hereafter.

Nor do I know any use of the word cause that does not fall under one or other of these divisions; all exceptions will, on analysis, be found to be apparent only. When, for example,

I say that gravitation, or gravity, is the cause of the elliptical motion of this "huge rotundity," or that inflammation is the cause of fever, or that life is the cause of organization, or that division of the eighth pair is a cause of death; I mean, in the first case, that either the author, or the physical conditions or instrumental causes of gravitation, bear a like relation to circular motion; in the third and fourth, that the simpler states or events, inflammation and division of the eighth pair, are as effects of common cause, or otherwise connected in time with the more complex states or effects, fever and death. In the second, that vitality was the end or purpose held in view by the organizing spirit, and so also in more complicated instances.

Hence it appears that the question, What is the cause of life, &c.? is susceptible of four distinct classes of answers. In understanding the word cause, in the first sense, in which it signifies planning and arranging power, we may affirm that an intelligent substance is the cause of vitality; as God, the soul, or a vital principle.

In the second sense, we may affirm oxygen, carbon, sodium, &c. or the maps, our organs, to be causes of life.

In the third sense, we may call motion and sensation, digestion and generation, causes of vitality and organization, and organization and vitality mutually causes of each other; for there can be no doubt that it was with a view to such effects and results that God blew into man's nostrils the breath of life.

And, in the fourth sense (separating from muscular contraction and from sensation the individualizing elements of place, time, &c. and subliming them into contractability, or irritability, and sensibility) we may, not unpoetically, call irritability and sensibility causes of life.

Hence we perceive the truth of the seeming paradox, that, on the same subject, to speak popularly, four different declaimers might declaim till the hour of doom, without coming to an agreement, and yet without once contradicting each other.

(To be continued.)

On Depressed or Exhausted Strength. By Dr Kinglake.

In the whole range of medical physiology, there is no subject of greater practical importance than a correct distinction between depressed and diminished or exhausted strength. The vital conditions of these two states are not only essentially different, but nearly opposite, as well in quality as in the treatment that would be respectively applicable to them. It is therefore

of the utmost moment, in the management of disease, clearly to ascertain the actual state of the existing strength, whether it be depressed and rendered ineffective, from accidental impediments to its exertion, or positively deficient, and consequently incapable of being beneficially brought into increased action.

Depressed strength consists in its being placed in a state of abeyance by morbid influence, which prevents its being exerted in a manner that would be consistent with the natural energies of life and health. The removal of such morbid influence would be the restoration of a vital power to its healthful action, evincing that such power had not been materially diminished or exhausted, but oppressed and incumbered, so as to have incapacitated it for its natural functions. In such circumstances, then, the derangement arises from obstacles opposed to a free and healthy exertion of vital power, and not from any want of strength for effecting that salutary purpose.

In the early stages of all acute diseases, of all affections of the febrile and inflammatory kind, the general strength may be practically regarded as depressed, and not exhausted. Although a sense of debility is common to every description of disordered health, as emanating from a loss of salutary tone and harmony, yet the feeling is fallacious, in reference to the state from whence it originates. The morbid state, from whatever cause proceeding, may and actually does announce itself by a sense of weakness; but the sensation relates rather to the sensibility than to the irritability of vital power. It belongs to sensation, which is a nervous function, and not to the irritative action of vital power, which furnishes a far more unerring criterion of the real state of the existing strength than could be derived from mere sensation.

In lingering and chronic affections, arising from unremedied diseases, training on to that condition of positive weakness in which strength is not simply depressed or ineffective, but positively so far exhausted as to be incapable of sustaining the functions of life, in healthful energy, a different sort of malady presents itself. Under these morbid circumstances, a deficiency of strength exists, that requires to be supplied; and the difficulty of affording an adequate remedy consists in renewing the nutritive and other healthy processes on which a restoration of natural strength essentially depends. It is easy to excite: aliments, possessing the most nutritious qualities, may be passed into the stomach; but will they certainly conduce to the improvement of strength? Much incertitude attends the influence of dietetic and medicinal agency. The indication of cure may be obvious, but the fulfilling of it is often an arduous task, and frequently unattainable.

An accurate diagnosis between depressed and exhausted

strength is of the utmost practical importance. In the vast scale and diversity of disease occurring for medical treatment, the distinction referred to requires to be correctly made, as a sure ground for instituting an appropriate and successful mode of management. In every disease deeply involving the functions of health, it is of the utmost consequence duly to regard the discrimination insisted on. Whatever may be the character or intensity of the malady, its real or strictly pathological state should be attentively considered. A striking resemblance exists between ailments affecting the general system in the leading features of weakness and perturbed feelings; but it needs no very keen penetration, or subtle discernment, to perceive the substantial difference subsisting between them, in respect of the strength of the vital power that may be disordered.

The same cause of disease affects persons very differently, owing to the universal dissimilarity of constitution. No two individuals are in strictness similarly constituted. The outline is alike, but the filling up, the minute particulars, are variously arranged and constructed. This circumstance satisfactorily accounts for shades of difference arising in the progress of complaints apparently similar in different individuals; but it does not materially interfere with the condition of strength that may chance to exist during the prevalence of disease.

In all instances where the general strength is tolerably perfect, the occasion of disease, whatever may be its name or designation, will be marked by symptoms of depressed, and not exhausted, strength. The morbid disturbance will produce a sense of weakness, and the oppression under which the strength may labour may so far diminish and restrain vital action, as to induce the aspect of extreme weakness; but the recent state of health evinces that this cannot be from *exhaustion*, but *depression* only, and that suitable depletion, and other modes of liberating vital power from its clogs and impediments, will be necessary for obtaining relief.

Concatenated and interwoven as all the different structures and functions of the animal frame are, it is not extraordinary that much confusion and distress should prevail, when any diseased influence has obtained sufficiently to subvert the natural condition of health. That sensation should be distempered, that secretion should be vitiated, that the action of the heart and arteries should be disordered, and that irregular distributions of the circulating fluids, occasioning plethora in some situations, and deficiency in others, should occur, may be reasonably expected. Amidst such dilapidation of health, and perversion of natural action, the process of disease must be slow, afflicting, and eventful, requiring assistance that would appease

the commotion and prevent the degree of mischief, whether functional or structural, that might prove destructive of life.

If, in these instances of disease, strength is depressed, and, as it were, so fettered as to be rendered too inactive, it is clear that removing the obstacles to its free exertion would be the correct mode of treatment. It would not do, nor would it be safe, to stimulate in such circumstances. An impeded circulation from plethoric fulness, disordered functions, suspended or vitiated secretions, cannot be amended by any scheme of excitement. Such a morbid state cannot be reached by any specifick influence that may be directed to the correction of diseased action. It can only be remedied by adequate depletion, effected by direct abstraction of blood from the vascular system, by ample discharges from the intestines, and a free and equable determination to the skin. The object is to remove without delay from the system hurtful plenitude generally, and especially the excrementitious fluids that may be unduly retained, and which should seasonably escape by the secreting emanations established in the larger intestines and on the skin. Were these necessary discharges to remain in the system, the general strength would become additionally oppressed, be slowly wasted, and would ultimately succumb for want of being timely restored to active exertion.

Depressed, and not exhausted, strength, lies at the root of most acute diseases, and also at that of a large proportion of the chronic affections of the viscera, and will therefore require for relief depleting, instead of tonic and stimulating, treatment. The cases in which exhausted strength is the real condition of the disease, are in ailments that have long existed, in aged persons, and in worn constitutions, from protracted residence in tropical and uncongenial climates. In the last stages of disease, too much real debility or exhausted strength often arises, demanding appropriate excitement and support to prevent an extinction of life.

The great practical use to which the distinction between depressed and exhausted strength is applicable, is a suitable treatment of diseases at their commencement, according to the nature of the ailment, and the constitutional strength of the individual who may be the subject of it. Where the previous state of health, and the habitual strength of the system, admits of the inference that no deficiency of vital power exists, it will be expedient to withhold additional excitement, and to liberate and raise the energies of the system by sufficient depletion, especially by bleeding and intestinal discharges. An unobstructed state of the cutaneous exhalants, evinced by free perspiration, and temperate heat of the skin, will powerfully contribute to relieve and disembarrass the vital power from the various incum-

brances by which it is apt to be oppressed and borne down. The design is to give full scope and effect to natural power, by unshackling it from all confinement and restraint. To equalize the distribution of the circulating fluids, to restore the healthful state of the nervous secretions, and to impart freedom of action to the heart and arteries, would be to realize the curative intention in this condition of disease.

In febrile and inflammatory attacks, however, the general strength may be depressed and disabled; however small the pulse and oppressive the sense of weakness, no hesitation should be felt in carrying into full effect what is termed the antiphlogistic or antistimulant treatment. The attempt should be to lessen the degree of excitement produced by an interrupted circulation of the vascular fluids, and the disturbed and vitiated secretions. When the hurtful influence, arising from this unhealthful state, has been overcome, the desired relief will be effected, and progressive convalescence will mark the course of returning health.

Much confidence may be felt in treating diseases of recent date, and sudden occurrence, on a depleting and sedative plan; well knowing that the morbid causes are of themselves too stimulating, and that diseased fulness, or the plethoric state, prevents the reaction that would naturally tend to restore the lost condition of health. To be scared by the apprehension of increasing debility, when the debility is specious and not real, when the morbid condition of vital power is that of depression and impeded action, is an unnecessary alarm; and has no warranty in the nature of the affection.

The treatment of acute diseases of every description, should, at the commencement, be sufficiently powerful to repress the progress of morbid action, and to obviate the loss of strength that would result from its unchecked continuance. A timid vacillating practice, on these occasions, is deceptious, unavailing, and often irretrievably injurious. It permits disease to run on, fanning the flame of depressed strength, and inducing by long continuance structural as well as functional lesions, incorrigibly vitiated secretions, exhaustion, paralysis, gangrene, and death.

The urgency arising for a decisive and efficient treatment of the diseases associated with depressed strength, does not exceed that which exists in managing the morbid state connected with exhausted or diminished strength. Here the endeavour must be to supply the deficient power under which life totters, and will finally sink without due support. This is sheer debility, a want of vital energy. The generative or vivifying process that furnishes the materials and arrangement for life, is insufficient. It neither yields what is requisite for healthy action, nor scarcely enough even for vital existence. Under such circumstances, if

the living power cannot be more adequately supplied, increasing debility will proceed in its destructive career, until the feeble remains of life progressively ebb, and soon become wholly extinguished.

In those cases, nutritive support, the tonic influence of medicinal agency, atmospheric purity, genial temperature uniformly sustained, friction over the surface, especially on the visceral regions, and moderate excitement by alcoholic fluids, properly diluted, are indicated. On such occasions, there is no time to lose, the cause of destruction is incessantly working; if the counteracting agency do not more than equipoise the noxious power, no amendment can be effected. The trial, therefore, is between them: the more powerful of the two, either the disease or the remedy will prevail; it is the province of medicine, if possible, to cause the latter to triumph.

TAUNTON,
August 1st, 1826.

PHARMACY.

Pharmacopœia Collegii Medicorum Regis et Reginæ in Hibernia. 8vo. Pp. 296. Dublin, 1826.

IT would not be unreasonable, in any one unacquainted with the secret history of corporate bodies, to imagine, that, although there are three Colleges of Physicians in the United Kingdoms, yet there should be one Pharmacopœia only for the benefit of the public. This opinion, however, presupposes the possession of virtues by corporate bodies, which these associations know by name only; imagines that colleges love science for its own sake; are indued with liberal feelings towards one another; and, in all their transactions, seek to extend the utility of the profession over which they preside, and to elevate its character, in all its branches. We will not pause here to inquire how far such an opinion accords with truth; but merely mention that, in contemplating the publication of the volume before us, we fondly anticipated that it would have been an amalgamation of the best parts of the London and the Edinburgh Pharmacopœias; and, with the introduction of some articles which neither of these works yet contain, it might have formed the basis of a future national pharmacopœia. We must acknowledge, that, in this expectation, we allowed ourselves to be misled by hopes which past experience should have taught us are visionary, and we wonder how the phantasm got possession of our

brains. We do not, however, hesitate to assert, that it is a superior production to either of its precursors,—an assertion which we could prove, were we desirous to make our review rather a critical dissertation, than an analysis of the work. Our readers, however, will be enabled, in a great degree, to form an opinion for themselves, from the epitome which we mean to lay before them.

In the preface, we are informed that the arrangement of the former Pharmacopœia has been changed, to accord with the advanced state of chemical science; that some new medicines, which experience has approved, have been introduced,—the preparation of others altered,—and a few, which are scarcely ever prescribed, rejected; and from many experiments instituted by the College, we quote its own language, "et nuper inventis de constitutione *atomica* corporum nixi, rationem principiorum in præparatis quibusdam mutavimus." How far this is wise, in the present state of atomic chemistry, we will not venture to decide. We are more satisfied with the reasons given for retaining many of the old names, which might have been changed: "Plurima nomina usu sancita, interdum brevitati consulentes, interdum periculum erroris in præscribendis vel componendis medicamentis evitantes, retinuimus."

The alterations in the list of Materia Medica may be arranged under the following heads; Rejections, Introductions, and Changes in Nomenclature. Under the first of these, we find that the following articles have been rejected: Ichthyocolla, Acidi citrici crystalli, Acori radix, Æsculus *hippocastanum*, Agrimonia, Arethusæ radix, Calculi oculi dicti, Chelæ cancrorum, Artemisiæ *abrotani* folia, Artemisiæ *maritimæ* cacumina, Eryngium, Gratiola *officinalis*, Helleborus *fœtidus*, Hyssopus, Linum catharticum, Millepedæ, Salvia, Sapo hispanicus, Sium nodiflorum, Solidago *virgaurea*, Teucrium *marum*, Teucrium *Chamædrys*, Swietenia *febrifuga*, and Tutia. There can be one opinion only as to the propriety of the rejection of these articles, with the exception of the root of Acorus *calamus*, which we know from experience to be a valuable remedy, and to ensure the specific virtue, if we may be permitted the expression, of the cinchona bark, in cases of ague, in which the Peruvian drug failed to effect a cure when exhibited alone. Indeed, the rejection of acorus appears the more singular, when we perceive that the following articles, with which we would not hesitate to swell the list of rejections, are still retained. Anethum *fœniculum*, Arctium *Lappa*, the seeds also of which are now introduced! Aspidium *filix mas*, Cardamine *pratensis*, Cnicus *benedictus*, Dianthus *caryophyllus*, Litmus, Lythrum *salicaria*, Origanum *majorana*, Papaver *Rhœas*, Prunus *domestica*, Rosa *centifolia*, Rosmarinus *officinalis*, Sambucus *ni-*

gra, Laurus *sassafras*, Scrophularia *nodosa*, Tanacetum *vulgare*, and Viola *odorata;* all of which we consider as a portion of the lumber of an obsolete and inefficient state of practice.

Among the introduced articles, we find the seeds of Angelica *Archangelica*, for what purpose we know not, as they are merely cardiac, and inferior in this respect to carraway seeds. The leaves of Arnica *montana* are also now ordered; and we think that they are as useful as any other part of the plant; but we would ask, When is any part of it ordered? We consider the introduction of the bitter almond, and the leaves of Amygdalus *persica*, inasmuch as they contain a natural combination of prussic acid, very judicious; and not less so the adoption into a British Pharmacopœia, of Artemisia *Chinensis* and A. *Indica*, which form the Moxa of the Chinese; the root of Belladonna; Cocculus *suberosus* (formerly *Indicus*); the seeds of Datura *stramonium*,—why is the root omitted? Diosmæ *crenatæ* folia (*Buchn.*); Ferri cyanuretum (*Prussian blue*); Iodinum; Strychnos *nux vomica;* the leaves of Ranunculus *acris*, and fresh herbaceous part of Ranunculus *flammula*. The other new articles are, Adeps ovillus, the leaves and roots of Althæa *officinalis;* Farina ex seminibus Lini usitatissimi, which is unaccountably omitted in the other British Pharmacopœias; Barytæ sulphas; Bismuthum; Cerevisiæ fermentum; Cochlearia *officinalis;* Cacumina Juniperi; Subacetas cupri; Krameriæ radix et extractum; Lactuca *sativa* and *virosa;* Laurus *nobilis;* Mel; Oleum Crotonis *Tiglii;* Daucus *carota;* Marmor album; Melissa *officinalis;* Morus *nigra;* Balsamum peruvianum; Oleum Origani; Cubebæ; Chian turpentine; Mastiche; Kino; Pulvis seminum Sinapeos *nigræ;* Sapo mollis; bark of the root of Punica *granatum;* Opoponax; Pyrola *umbellata;* Rosæ *caninæ* fructus; Verbascum Thapsus, and Vinum album Hispanum. Some of these articles could certainly be well spared; and we would inquire, upon what principle the leaves of Momordica *elaterium* are introduced? for, although the ancients regarded every part of the plant as purgative, yet the experiments of Dr Clutterbuck have disproved this opinion. The introduction of Ossa we would almost venture to reprobate as disgraceful to a scientific body; and should be glad to be informed in what manner bones are supposed to be decomposed, and rendered useful in the living system, as a remedial agent? We would, also, inquire, why Amylum is omitted, and Farina tritici retained? Tragacanth, which is now first introduced into the Irish Pharmacopœia, is properly referred to Astragalus *Creticus* of De Candolle. Calx recens usta is judiciously introduced, as very few druggists or apothecaries take the trouble of burning lime for making lime-water, but use that which is burnt at the kiln: and, for a similar reason, we approve of the introduction of lin-

seed oil into the list of Materia Medica, as scarcely one apothecary draws his linseed oil himself; and that usually found in the oilman's shop is sufficiently pure for the purposes to which it is applied in medicine. With respect to Crystalli cupri acetatis, we would ask, What is the advantage of the acetate over subacetate, either as an internal medicine or an external application?

Under the head of Nomenclature, we find the following changes. The epithet *venale* is now added to the term Acidum sulphuricum, to designate the state in which that acid is supposed to exist, as an article of Materia Medica. Aconite, instead of being supposed to be the species *Neomontanum*, is now accurately stated, on the authority of De Candolle, to be paniculatum: this, undoubtedly, is the species so much lauded by Storck; but the var. α should have been designated. The name Ammoniæ murias of the London College is now adopted for Sal ammoniacum; Anthemis *nobilis*, flores, instead of Chamæmelum, flores; Conium *maculatum*, instead of Cicuta; Bitartras potassæ for Tartari crystalli; and Manganesium, which was a very inaccurate term in a scientific work, is now properly exchanged for Manganesii oxydum. Bulbus is accurately employed, instead of radix, in designating that radical appendix of bulbiferous plants; and pulpa to denote the medulla of the pepo of colocynth. The part of Cassia *fistula* used, is now termed *pulpa leguminis;* and the terms adopted by the London and Edinburgh Colleges, to mark the officinal species of cinchona, are now those of the Irish College. The opinion of Gærtner, that Carduus *benedictus* is a Centaurea, is regarded as correct; and that also of Persoon, that Lesser Centaury is not a Chironia, but an Erythræa. Litmus is now also, on the authority of Acharius, taken from the genus Lichen, and placed under Roccella, with the specific title *tinctoria*. Copaiba is now termed Resina liquida, instead of Balsamum; and, certainly, as it approaches nearer to the turpentines than the balsams, the new term is undoubtedly the most appropriate: the error, also, of terming the liquid resin of Pinus *balsamea*, a balsam, is corrected. Zedoary is now referred to Curcuma *longa*, and Winter's bark to the Drimys *aromatica* of De Candolle. The error of considering the calyx of Eugenia *caryophyllata* as the clove, is corrected by the substitution of the term "flores nondum expliciti." Euphorbia *Canariensis* is given as the plant yielding euphorbium, and is probably correct. We are not a little surprized that guaiacum is set down as a resin, since it is now ascertained that it has no affinity with resin; and we are scarcely less so, that, although ammoniacum is put down under Heracleum *gummiferum* as a *gum resin*, yet it is styled "*gummi*"

simply, when first mentioned in the list under the title Ammoniacum gummi.

The specific gravities of rectified and proof spirit are thus stated. "Spiritus rectificatus, *Anglicè* rectified spirit. *Hujus pondus specificum sit* 844, *ad gradum caloris* 51^{m} *vel* 840 *ad gradum caloris* 60^{m}."

"Spiritus tenuior, *Anglicè* proof spirit. *Hujus pondus specificum sit* 923, *ad gradum caloris* 51^{m} *vel* 919 *ad gradum caloris* 60^{m}."

"Spiritus fere omnis qui sub nomine Proof Spirit, prostat venalis oleo empyreumatico inquinatus et ad usum medicum ineptus est: spiritus ejusdem fere ponderis specifici conficitur commiscendo partes 5½ spiritus rectificati, mensura sumptas, cum partibus tribus, itidem mensura, aquæ distillatæ, ad gradum caloris 60^{m}."

The diluted spirit of the Dublin College, therefore, contains 68.10 of alcohol, and 31.10 only of water in 100 parts.

On passing through the pharmaceutical preparations, we shall take them in the order of the work, and notice those only in which some change is ordered, and those which are altogether new. The preparations are arranged under the following heads. *Acida, Alkalia, Terræ, Sales alkalini, Sales ferrei, Sulphurea, Metallica, Olea expressa, Olea essentialia, Aquæ distillatæ, Ætherea, Spiritus, Tincturæ, Aceta medicata, Vini medicati, Mella medicata, Confectiones et Conservæ, Syrupi, Succi spissati, Extracta, Pulveres, Pilulæ, Electuaria, Unguenta, Emplastra, Extemporalia, Miscellanea.*

Under the section Acida, we find the following novelties.

Acetum distillatum.—In this preparation, instead of ten pints, ten *parts*, by measure, of wine vinegar are ordered to be used; and eight parts to be distilled, rejecting the first part. The specific gravity of this acid is consequently less than that of the former, being 1005.

We are rather surprized that vinegar is still ordered to be distilled for pharmaceutical purposes. An acetic acid of a better quality, and a more definite strength, might always be obtained, by adding water to the strong acetic acid. Why, we inquire, is not the unobjectionable name, *Acidum aceticum tenue*, of the Edinburgh College, adopted?

Acidum aceticum.—The quantity of sulphuric acid now ordered for decomposing the acetate of potass is greater than that stated to be necessary for the same purpose in the former Pharmacopœia;—the effect of which is to concentrate the acetic acid, by the strong affinity of the sulphuric acid for water; and, consequently, the product is now stronger, and of a greater specific gravity, than the old preparation.

Acidum benzoicum.—The process now ordered for this preparation is a modification of that of Scheele. *Five parts* of benzoin, which, according to Bucholz, contains rather more than one part of benzoic acid, is directed to be rubbed with *one part* of fresh quicklime; and the mixture boiled, for the space of half an hour, in 130 parts of water, stirring assiduously; and, after it is cold, and the fluid decanted, the residue is to be treated in the same manner with 70 parts of water. These fluids, mixed together, and filtered, are to be reduced, by boiling, to one half, and *one part* of muriatic acid gradually added; the precipitate thus produced, after being washed in a small quantity of cold water, and dried in a gentle heat, is to be sublimed over a moderate fire. The product of this process is a very pure benzoic acid. But we are of opinion that the quantity of lime ordered is rather too small to separate the whole of the benzoic acid; and, as the proportion of the muriatic acid, or sp. gr. 1080, if it be taken by weight, is fully adequate to decompose the benzoate, and saturate the whole of the lime employed, the word *pondere* should have been introduced, to render this point unequivocal; for if the same proportion, by measure, were employed, the quantity would be more than sufficient.

Acidum citricum.—This acid, which, in our opinion, is unnecessarily introduced among the preparations, as it is manufactured very pure, and at a reasonable price, on the great scale, is directed to be prepared by saturating any quantity of heated lemon juice with chalk, and decomposing the citrate thus formed, after it has been washed and dried, with eight times the quantity of diluted sulphuric acid as there has been of chalk employed. The mixture is then to be boiled, strongly expressed through cloth, then filtered through paper, and evaporated until crystals form on cooling. Here, also, it is intended that the acid should be weighed, although this is not expressed.

Acidum muriaticum.—The formula for the preparation of this acid is much improved. The quantity of sulphuric acid, which in the former Pharmacopœia was too great, is now reduced nearly one eighth part, whilst the water is increased one fifth; and half of it ordered to be put into the receiver, which both renders the process more manageable, and prevents any loss from the rapid extrication of the gaseous acid in the commencement of it. The specific gravity of the new acid is to that of the old as 1.160 to 1.170. The diluted acid is now ordered to be prepared with ten parts, by *measure*, of the acid, and eleven parts, by *measure*, of water; which brings it to exactly the same specific gravity as when it was prepared with an equal weight of the stronger acid of the old formula, and of water.

Acidum nitricum.—One hundred parts of nitrate of potass

are now ordered to be mixed with ninety-seven parts of common sulphuric acid, and distilled from a glass retort into a receiver fitted with a Woolfe's apparatus, until the residue concrete, and again liquefy. The result of the new process is a weaker acid; the specific gravity being 1.490, whereas that of the acid of the former Pharmacopœia was 1.500.

The name of the acid is now correct; and, consequently, that of the diluted acid also, which is now directed to be prepared with three parts, by *measure*, of nitric acid, and four parts, by *measure*, of distilled water. The specific gravity is the same as that of the former diluted acid, which was prepared by mixing equal parts of the old acid and of water.

Acidum nitromuriaticum.—Some objections might be raised against the introduction of this acid mixture into the Pharmacopœia; but if it be used either internally or externally by British practitioners, it is proper that it should always be of an uniform strength. It is directed to be prepared by mixing one part, by *measure*, of nitric acid, with two parts, by *measure*, of muriatic acid; and the mixture is properly ordered to be made in a cooled vessel, and kept in a closely stopped bottle in a cold and dark place.

Acidum prussicum.—We rejoice to see this acid at length introduced into a British Pharmacopœia, as we have every reason for thinking that it would long since have held a place in the London Pharmacopœia, had other motives than a conviction of its inadequacy as a medicine not prevented it. As we consider the formula unexceptionable, we will give it to our readers in the language of the Dublin College:

"ACIDUM PRUSSICUM.

"R. Cyanureti hydrargyri unciam,
Acidi muriatici *mensura* drachmas septem,
Aquæ *mensura* uncias octo.

"E retorta vitrea in vas recipiens refrigeratum distillent *mensurâ* unciæ octo, in vase probè obturando, loco frigido et obscuro asservandæ.

"Pondus hujus acidi specificum est ad pondus specificum aquæ distillatæ ut 998 ad 1000."

Acidum sulphuricum purum.—As sulphuric acid is never employed in its undiluted state as a medicine, and as the addition of water to the strong acid causes a precipitation of any sulphate of lead, or of potass, which it may contain, we cannot see the advantage of encumbering the Pharmacopœia with an operose and useless preparation. The ordinary sulphuric acid is directed to be distilled from a colourless glass retort into a receiver equally devoid of colour, and with the joinings so luted that the retort may stand the heat until a twelfth part of the fluid come over, which is to be rejected as watery. The receiver is then to

be again filled to the retort, and the distillation continued to dryness. To prevent the ebullition from being too violent, some thin plates of platina are to be put into the retort. The diluted acid is now made by the addition of seven parts of distilled water, to one of the pure acid. The specific gravity of this mixture is to the old diluted acid as 1084 are to 1090.

Acidum tartaricum.—The Dublin College, in placing this acid among its preparations, has modified a little the process adopted by the London College. Less prepared chalk is ordered to be used, and more sulphuric acid, than the London College directs.

The second section, ALKALIA, contains the pure alkalies only, which are used medicinally. Although a very small section, yet it contains several alterations.

Ammoniæ causticæ aqua.—The quantity of lime now ordered to decompose the muriate of ammonia, is one third less than that of the muriate, instead of being twice as much, as in the former Pharmacopœia; the proportion of water is also diminished nearly one half. The solution obtained is of a greater specific gravity than the former, in the proportion of 950 to 934; and, consequently, the present preparation contains less ammonia, or is proportionally weaker. How far the College is justified in varying the strength of preparations which have been long in use, we will leave our readers to determine.

Potassæ causticæ aqua.—The preparation of this solution is greatly simplified; and the directions for the filterings, which were undoubtedly injurious, are altogether left out.

Query—Is not the potass contained in pearl ashes a subcarbonate? We ask this question on account of the words "potassæ carbonatis e lixivo cinere." The product is lighter than that of the preparation ordered in the former Pharmacopœia.

Potassa caustica.—The kali causticum is changed in name only; but in *potassa caustica cum calce*, besides the adoption of the term potassa for kali, the solution is ordered to be evaporated to one fourth part, instead of one third, before the lime be added, which we consider an improvement.

The third section, "TERRÆ," contains only two preparations: 1. *Aqua calcis*, which is now properly ordered to be decanted from the subsided lime, instead of being filtered, which, notwithstanding the covered state of the funnel, certainly allowed the lime to attract carbonic acid from the atmosphere, and the solution to be consequently weakened. 2. *Magnesia*, from which the epithet *usta* is now rejected.

The fourth section, "SALES ALKALINI," contains several alterations of formulæ, and a few new articles. The following are the more remarkable; for, were we to notice every change of name, and of other trivial circumstances, our analysis would extend beyond ordinary limits.

Ammoniæ acetatis aqua.—The principal alteration in this formula is the ordering the distilled vinegar to be heated. We confess that we are not aware of any advantage that can result from heating a fluid which unites with ammonia at all degrees of temperature.

Ammoniæ carbonatis aqua.—Instead of the operose process of the former Pharmacopœia, we are now directed simply to dissolve four parts of the carbonate of ammonia in fifteen parts of distilled water, and to filter the solution through paper. This solution is weaker than the old preparation; but it is sufficiently strong for all the purposes of medicine.

Ammoniæ bicarbonas.—This is a new preparation, procured by exposing the solution of the common carbonate, in a proper vessel, to a current of carbonic acid gas, extricated from white marble, by diluted muriatic acid. The crystals dried without heat, are to be kept in a closely stopped bottle. No objection can be made to this process; but we consider the preparation an unnecessary one, in a medical point of view; ammonia being prescribed on account of its stimulant effect on the nervous system,—an effect independent of the carbonic acid, with which it is united, either in the carbonate or bicarbonate. We must, however, in candour, admit, that, as the bicarbonate has no odour, and is less acrid to the taste than the carbonate, it can be more readily swallowed in large doses.

Potassæ acetas is now directed to be prepared with carbonate of potass from crystals of tartar, instead of the common subcarbonate.

Potassæ carbonas e lixivo cinere is the name now appropriated for Subcarbonas kali; and *Potassæ carbonas e tartari crystallis* for Kali e tartaro. The method of preparing these varieties of this carbonate remain unaltered. In the same manner, the word kali is changed to potassa, in all the preparations of this alkali.

Potassæ carbonatis aqua.—Instead of the spontaneous liquefaction of the common subcarbonate of potass, which, to say the least of it, was a tedious process, the solution is now directed to be made at once, by dissolving one part of the carbonate from crystals of tartar, in two parts of distilled water, and filtering. The advantage of the new formula is, that it affords a preparation always of the same definite strength. The specific gravity of the solution is 1320.

Potassæ bicarbonas.—This is prepared by passing a stream of carbonic acid gas through a solution of one part of carbonate of potass from potashes, in two parts of water. The preparation is more accurately named than it is in either the London or the Edinburgh Pharmacopœias; and the crystals are judiciously ordered to be procured without the aid of heat, which, even so low as 120°, the temperature ordered by the London College

for evaporating the solution, is apt to expel a portion of the carbonic acid from the salt in crystallizing.

Potassæ bisulphas.—This is the same salt which the London College, under the title *Potassæ supersulphas*, orders to be prepared from the salt which remains after the preparation of the nitric acid. The preparation is ordered by the Dublin College to be made by saturating the common carbonate of potass with sulphuric acid, and then adding as much more acid, and crystallizing. This is certainly a better mode of preparing the salts than that of the London College; for we are of opinion, that every preparation resulting from the direct combination of components, is preferable to that which is left as a residue, in any process having for its object another form of preparation. In the former, the proportions are always the same; but in the latter, the extent to which the distillation of the acid is carried, and many other adventitious circumstances, tend to vary the proportions of the components, and consequently the character of the compound. The proportion of acid ordered, seems to have been adopted in Dr Wollaston's demonstration, that this salt contains just twice as much acid as the sulphate.

Sodæ acetas.—As this is a new preparation, we will give the formula for it.

"R. Sodæ carbonatis quantum opus erit,
Aceti distillati quantum satis est ut saturetur alkali.
Liquor colatus vaporet donec pondus specificum 1276 attigerit.

"Refrigeratione fiant crystalli cautè exsiccandæ et vase obturato servandæ."

As we are ignorant of the medicinal properties of this preparation, we cannot venture to offer any opinion of the propriety of its introduction into the Pharmacopœia. From analogy, we suppose it is diuretic.

Sodæ bicarbonas is introduced, for the first time, into this Pharmacopœia. It is directed to be procured by dissolving two parts of the carbonate of soda in five of water, and passing through the solution a stream of carbonic acid gas, in the same manner as ordered by the London College. It is an expensive preparation, and does not, except in being more tasteless, possess any advantages over the carbonate. An *acidulous solution of carbonate of soda* has been also introduced, containing a drachm of the carbonate in each pint of the solution,—a larger proportion than ordered by the Edinburgh College; but even still little enough, if any beneficial medicinal effect be expected from the presence of the alkali.

The only other alterations in this section consist of changes of terms, and the substitution of *parts* for *pounds*, *ounces*, and other weights and measures.

(*To be continued.*)

PART II.

REVIEWS.

I. PRACTICE OF MEDICINE.

Observations on the Utility and Administration of Purgative Medicines in several Diseases. By JAMES HAMILTON, M. D., F. R. S. E., Honorary Consulting Physician to the Royal Infirmary, &c. &c. 8vo. Pp. 202. Edinburgh 1826. Eighth Edition, *Revised and Improved by the Author, with a chapter on Cold Bathing, considered in its Purgative Effect.*

IT may be thought strange, that we should sit down, calmly and deliberately, to criticise and comment upon the production the title of which is placed at the head of the present article; but we are of opinion, that a useful subject cannot be brought too frequently under the review of the profession.

Dr Hamilton's work on Purgative Medicines has stood the test of twenty-one years' experience, and each succeeding edition has been hailed by the profession with ardour; many works of greater extent and of more imposing appearance, have gone down "to the tomb of all the Capulets," where they remain forgotten, since the first publication of his treatise; many voluminous systematic works on the subject of medicine have emanated from almost every press in Europe, but the theories and doctrines they contained have ceased, in a great measure, to agitate the schools;—while the small practical octavo of our author still continues to form a standard, around which the greater number of the experienced portion of the profession rally. It has, in truth, put to flight the wild speculations of the humoralists, and has tended, more than any other work, to simplify the doctrines of physic, and to improve the mode of

treatment, in many complaints, which were formerly the opprobria of medicine. As commentary and not eulogium is our province, we shall proceed to examine the publication before us. Before going into the practical details of the book, however, we may remark, that we have seldom perused a work in which the diction was so uniformly unexceptionable: in respect of language, it forms a model which medical authors would do well to imitate: the clearness and precision with which opinions are stated; the closeness of argument it displays, and the happy manner in which conclusions are drawn, render the task of perusal delightful, and preclude the necessity of laboriously analyzing sentences and paragraphs, in order to comprehend their meaning.

The Treatise on Purgative Medicines is divided into thirteen chapters, and a copious appendix of illustrative cases.

In the first chapter, a concise view is given of the causes which have tended to impede the improvement of the practice of medicine; the second contains a short and elegant sketch of the physiology of the bowels; in the third is described the *modus operandi* of purgative medicines; and the eight succeeding chapters are devoted to detailed accounts of the good effects resulting from the employment of purgative medicines, in the treatment of typhus fever, scarlatina, cynanche maligna, marasmus, chlorosis, vomiting of blood, hysteria, chorea sancti viti, and tetanus.

The twelfth chapter contains a short description of the purgative effects of cold water, when applied to the surface of the body, and constitutes the only addition which the author has made to the subject-matter of the seventh edition of his work.

Although Dr Hamilton's opinions have been made extensively known, through the medium of his treatise, to the profession, both in this country and abroad, still they have not met with that notice in the journals of medical science which they merit; and, consequently, their beneficial effects have not been sufficiently felt in those barren soils where professional men are satisfied with the meagre outlines of a review, and are too apathetical or indolent to read and judge for themselves. We have met with such characters, and therefore write, in order to encourage them to peruse, and study with attention, a publication which no medical man of the present day should be unacquainted with.

It would occupy too much space to go into a minute detail of all our author's opinions relative to the operation of purgative medicines; we shall rest satisfied, therefore, with making such extracts from his work as will tend to illustrate, generally, the principles which have guided him.

It is allowed at all hands, that, when the system is either constitutionally or locally affected with disease, whether functional

or organic, that the digestive organs suffer sympathetically, and that this disorder of the chylopöetic apparatus, reacting upon the system, tends to modify or keep up the morbid actions that exist; such being the case, our author was naturally led to conclude, that remedies directed to relieve the disordered state of the bowels would act in a secondary manner on the system at large. Proceeding on this principle, Dr Hamilton, more than forty years ago, directed his undivided attention to the subject; and, reasoning on the phenomena which various diseases presented, he concluded, that the feculent matter, which is formed, and lodges in the intestines in great quantities in many diseases, in consequence, chiefly, of a torpid condition of the alimentary canal, gave rise to much irritation, and materially modified the functions of secretion and excretion throughout the whole animal economy; he was therefore led to exhibit, freely, those remedies which have a tendency to excite gradually, but effectually, the peristaltic movements of the intestines, and to promote the secretion of those fluids that assist in the process of assimilation.

"I employ, almost solely, what are understood to be purgative medicines in the diseases of which I am to treat, while I avoid their full effect of purging."—P. 21.

"Besides unloading the bowels, purgative medicines are said to stimulate the ducts of several glands connected with the stomach and intestines, and to promote their respective secretions, and to this effect much of the utility of purgatives is attributed. I think it unnecessary to inquire whether this opinion be well or ill founded; for, without derogating from the good effects of purgatives acting in this way, I will only observe, that, in the diseases of which I treat, I refer the benefits arising from them to their sensible effects of unloading the bowels, rather than to one which is less obvious; and that, for the sake of perspicuity, I speak of this effect as removing a cause of irritation, without, however, meaning to advance or support any theory on the subject."—Pp. 24, 25.

It is interesting to remark the circumstance that first led Dr Hamilton to the free employment of purgative medicines, as it affords a good specimen of that talent for observation which distinguishes the sagacious and intelligent physician. When treating on the effects of typhus fever, he remarks,

"Having been often disappointed in promoting the cure of this fever by means of mild antimonials, which were then so much in use, I was induced, by the same views which directed the employment of these, to use the Calx antimonii nitrata, Ph. Edin. editæ anno 1774. I gave four or six grains of this preparation for a dose, which was repeated three or four times, at an interval of two hours, unless sweating, vomiting, or purging were previously excited.

"I resorted to this practice towards the termination of the fever, and in the treatment of those patients only, of whose recovery I was exceedingly doubtful. I entertained hopes that a favourable crisis

might be procured by the efficacy of the antimonial medicine; and, in the mean time, I thought I supported the strength of my patients by the moderate use of wine.

" This antimonial remedy was not ineffectual; but I remarked, that it was beneficial only when it moved the belly. In this case, the feces were hard and fetid, and generally copious. On the discharge of these, the low delirium, tremor, floccitatio, and subsultus tendinum, which had prevailed, were abated; the tongue, which had been dry and furred, became moister and cleaner; and a feeble creeping pulse acquired a firmer beat.

" Reflecting afterwards on these circumstances, it appeared to me to be probable, that as the purgative effect of the Calx antimonii nitrata had been the useful one, any purgative medicine might be substituted for it, and that, by this substitution, the unnecessary debilitation of an exhausted patient, by sweating and vomiting, would be avoided."—Pp. 30, 31,

No one who has had an opportunity of witnessing the practice of Dr Hamilton, when ordinary physician to the Royal Infirmary, will deny the success attending his mode of treatment; and many who have not had the advantage of studying under him, but who have adopted the plan laid down in his work, can equally bear testimony to its value. When vomits, diaphoretics, venesection, and blistering, have failed, we ourselves have often remarked the gradual but decided improvement, and ultimate recovery of patients under typhus, on whom death had apparently laid his hand.

We have alluded, thus especially, but briefly, to the exhibition of purgative medicines in the treatment of typhus, as it was in that disease that Dr Hamilton was first led to employ them. In the other diseases in which he recommends their use, his mode of reasoning is similar; and it would therefore be a work of supererogation, on our part, to dwell upon it at present. We may merely remark, however, before quitting this part of the subject, that many who have not perused the treatise with attention, have asserted, that, in all the complaints of which he treats, Dr Hamilton inculcates the exhibition of purgative medicines, until their full cathartic effects be produced. So far is this from being the case, that we find him stating distinctly, in several parts of his work, that his object is merely to unload the bowels, and to promote the expulsion of those acrid and unhealthy secretions, and indurated feces, which, in many diseases, are so apt to accumulate in the intestinal canal.

When describing the treatment of Scarlatina, at p. 53. our author remarks, " I find these ends are best obtained by giving small doses of the purgative medicines which I employ, and by repeating these frequently, so that the latter doses may support the effects of the preceding one."

In Dr Hamilton's opinion, regarding the treatment of marasmus, we perfectly agree, both on practical and physiological

principles; for who that has had an opportunity of observing patients labouring under marasmus, but will be struck with the enlarged and protuberant appearance of the abdomen, the hippocratic character of the countenance, the emaciated condition of the limbs, the languid state of the circulation, and parched state of the skin; all of which are symptoms strongly indicative of defective digestion and assimilation? In such a state, purgatives seem to act not merely by unloading the bowels, and thus removing a powerful source of local irritation, but they act directly as stimulants, by exciting to action the exhalant vessels of the mucous lining of the intestines, and sympathetically those which terminate on the surface of the body. Who has not remarked the gradual rise in the frequency and in the strength of the pulse during the employment of purgatives, in those cases of cachexy, which seemed to depend either upon atonic irritation of the alimentary canal, or on irritation and enlargement of the lymphatic glands of the mesentery? Even where defective assimilation has gone on to such a height as to produce that affection of the bones generally termed mollities ossium, we have seen, in more than one instance, the morbid condition removed by a steady and persevering employment of purgative medicines; and here we would humbly suggest, that the *phosphate of soda*, which has been prescribed by some practitioners, who imagined that the softening of the bones depended upon a want of *phosphoric acid* in the animal economy, with a view to supply that component part of the osseous tissue, is merely of service in those cases where it acts as a purgative. The phosphate of soda is indeed one of those remedies, which, while it has the effect of relaxing the bowels, seems, at the same time, to possess a sedative quality; and we affirm that there is no laxative substance we know of, not even excepting henbane, that seems to be better calculated for allaying intestinal irritation.

We have not space to dwell longer on the subject of marasmus, and shall therefore proceed to notice briefly, the treatment employed by Dr Hamilton in chorea sancti viti, passing over those chapters which are devoted to the consideration of chlorosis and hysteria.

In chusing chorea as the subject of commentary, we are not induced, from any design to differ from our author in his opinions with regard to its nature, as we most heartily coincide in the doctrine which he inculcates; but, from a wish to agitate again a question which, for so many years, occupied the serious attention of the profession at large, and called forth so many treatises from practical men of distinguished talent and extensive experience. We are more inclined also to dwell upon this division of the work, as an excellent writer, and celebrated practitioner has attacked, rather severely, the opinions and practice

of Dr Hamilton. Sir Gilbert Blane, page 188. of his treatise, entitled Elements of Medical Logic, states, when alluding to Dr Hamilton's work :—" One of the diseases in which he recommends, *unqualifiedly*, the employment of this treatment is the *chorea sancti viti.* The qualified adoption of this practice, I am so far from disputing, that I lately employed it with success in the case of a young female from the East Indies, in which the vitiated quality, incredible quantity, and long continuance of alvine *sordes*, was such as to bid defiance to all the principles of physiology and pathology, to account for; but, in a young English female, under my care, about the same time, for the same complaint, nothing preternatural being observed in the alvine discharges, after the first clearance of the intestines, she was successfully treated by the cold bath and metallic tonics, chiefly the sulphate and oxide of zinc, and the recovery was effected in a shorter time than in the other." If we examine strictly the foregoing comment, we shall find that the reasoning employed is not of so weighty a character as to bear down or subvert the opinion and statements of Dr Hamilton. In the first part of the chapter devoted to the consideration of chorea, Dr Hamilton distinctly states, that, in the early part of his practice, he had obeyed the dogmas of the schools, and had treated it by stimulants, *tonics*, and the *cold bath ;* but that, finding these plans not attended with any certainty of success, he gave them up, and adopted that line of practice which he had found so serviceable in other diseases, where the primæ viæ were in a disordered state. On changing his mode of practice, Dr Hamilton soon found that the success attending it fully answered the anticipation he had formed; but he nowhere asserts, that it will prove equally successful on all occasions, and in the hands of every practitioner. Some medical men find it difficult to judge of the extent to which they should push any particular mode of treatment; others, fond of novelty, delight in changing from one class of remedies to another; while others are so wedded to preconceived notions, that they are unwilling to relinquish the theories and speculations that guided them in early youth. In short, Dr Hamilton does not recommend, *unqualifiedly*, the employment of purgatives in chorea sancti viti.

Again, Sir Gilbert Blane affirms, that, in one case, he employed the *cold bath*, which of itself has frequently the effect of inducing relaxation of the bowels. Dr Hamilton has well remarked, at p. 159, when treating of the purgative qualities of cold water applied to the surface of the body :

" An occasional interchange of their functions is a consequence of connexion which subsists among the excretory organs of the body. To this interchange it is owing that different applications move the belly. Among these, that of cold water is conspicuous, whether it be made by sponging, affusion, or by resort to the cold bath."

Lastly, Sir Gilbert Blane does not state whether the case of chorea cured by cold bathing was a severe one or not.

" There is another point in which I feel myself bound to declare my dissent from this respectable practitioner. He denies that different species of purgative medicines possess distinct powers over the different species of matter to be evacuated; and contemns the notions of Cholagogues, Hydragogues, &c. In the course of my experience, there is no practical fact with the truth of which I have been more satisfied, than the specific action of the various species of these remedies, in stimulating different organs, in dislodging and eliminating different species of corrupted secretions, and other feculent matter. What, for instance, can be more different than the operation of aloes operating as a mere eccoprotick on the muscular fibres of the intestines, and only on a particular portion of them, namely, the descending colon and rectum, and expelling only solid feces, from that of elaterium, of which half a grain taken three or four times at the interval of half an hour, evacuates immense quantities of serous fluid, exhibiting an example of the wonderful power of sympathy? for an impression made on the internal surface of the stomach by a few particles of matter, conveys by magic, as it were, an impulse to the most remote extremities, rousing their absorbents to action, and, in case of *œdema* there, awakening the sleeping energies of these vessels, which, like millions of pumps at work, transmit the morbid fluid to the intestines and urinary passages, effecting a detumescence of the hydropic limbs in the course of a few hours, and affording a striking illustration of the sympathetic action of medicines, and an instructive example of those of the sorbefacient class. Again, what can be more different than the operation of neutral salts and calomel, the former exerting but little influence beyond the surface of the intestines, exciting the action only of the serous exhalants, mucous follicles and glands; while the other, by extending its stimulus to the biliary ducts and pores, detaches foul congestions, which the other could not reach."—P, 189.

In this sentence, Sir Gilbert Blane does not appear to have comprehended fully the opinions of Hamilton; nor are those arguments which he adduces in support of the specific effects of purgative medicines, so weighty as they appear at the first glance to be. Dr Hamilton's object in prescribing purgative medicines, in the diseases to which he has confined his remarks, is to excite the action of the bowels, without stimulating *highly* those secerning vessels in the chylopoëtick, and assistant chylopoëtick, viscera; and we think it would be no difficult matter to prove, that almost all purely purgative medicines act in a similar manner, provided *their doses be properly apportioned.* Without doubt there are remedies which have superadded to their purgative qualities, sedative, narcotick, and emetick properties. We may instance the phosphate of soda, hyoscyamus, and tartrate of antimony and potass. We deny that aloes, when

given in sufficient quantity, or when exhibited in the manner recommended by Dr Hamilton, acts as a mere eccoprotick to the rectum; for we have seen it in more than one instance bring away copious and watery evacuations, tinged as highly with bile, as when the bowels had been opened by means either of croton oil, or one of the preparations of mercury. We have found aloes in small doses almost give rise, in some cases, to hypercatharsis, when the neutral salts produced little effect; and *vice versa*. In truth, in prescribing purgative medicines, the practitioner must judge of the one he should employ, by attending minutely to the idiosyncrasy of his patient, and the condition of the body at the time. We trust Sir Gilbert Blane will forgive us for the liberty we have taken in canvassing some of his opinions; but we respect him, and trust, that, if this should meet his eye, he will, in the next edition of his excellent work on medical logic, revise the paragraphs we have extracted from it.

The interesting nature of the subject having induced us to extend our remarks on Dr Hamilton's work to a greater length than we had originally intended, we shall conclude this sketch by making some brief allusions to the *purgative effects of cold bathing*. The chapter on this subject constitutes, as we have already remarked, the only important point which Dr Hamilton had not fully discussed in the former edition of his work.

There are few who have been in the habit of bathing, either for amusement's sake, or in order to refresh a frame debilitated by too close attention to sedentary occupations, but must have experienced its laxative effects. Indeed, some persons who are scarcely able to keep the belly properly open by means of purgative medicines, feel little difficulty in effecting that desirable object, by the systematic and daily aspersion of cold water over the body, by means of spunging, cold affusion, or the shower-bath. If, then, cold ablutions have such an influence over the bowels, when the body is in a state of comparative sanity, how much more likely are they to produce a powerful effect, when the system is labouring under disease! In a state of health there generally exists what may be denominated a just balance between the functions of the various secretory organs;—the skin, the serous and the mucous membranes, yielding their due quota of fluids. In disease that balance is deranged; and, in many complaints, there is either a diminution, or almost total cessation, of the secreting process in general, or some of the secreting organs are unduly active, while others are nearly effete. We observe such conditions to characterize, in a peculiar manner, the maladies to which Dr Hamilton has confined his remarks. From personal observation, indeed, we are inclined to believe,

that the salutary effects of the cold affusion in typhus, scarlatina and dyspepsia, are to be attributed, in some measure, to its purgative qualities; for, as our author remarks, p. 159., "An occasional interchange of their functions is a consequence of the connexion which subsists among the excretory organs of the body. To this interchange it is owing that different applications to the surface move the bowels."

We have not space to follow Dr Hamilton through all his chain of reasoning on this subject, and therefore refer our readers to the work itself; but we cannot conclude this article without directing the attention of our professional brethren to his valuable remarks on the pernicious practice of plunging the infants of our race into cold water, and retaining them in it till all power of systemic reaction is destroyed. It is to this improper custom, which is, in general, the result of mistaken notions on the part of wet-nurses, that the feeble energies of infancy are still farther weakened; and we do not hesitate to affirm, that, to this cause, may be attributed many of those cruel cases of infantile marasmus that every now and then present themselves.

An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause or characteristic condition of Indigestion, Nervous Irritability, Mental Despondency, Hypochondriasis, &c. &c.; to which are prefixed Observations on the Diseases and Regimen of Invalids on their return from Hot and Unhealthy Climates. By James Johnson, M. D., of the Royal College of Physicians, &c. 8vo, pp. 128. Underwood, London, 1827.

Dr Johnson is already so well known to the publick as the author of an eloquent Treatise on the Influence of Tropical Climates on European Constitutions, and by the learning and diligence with which he conducts our contemporary, the Medico-Chirurgical Review, that we merely deem it necessary to assure our readers of his identity with the name subscribed to the present essay. This publication is of a more didactick and argumentative sobriety of style, than we have been accustomed to admire in the first mentioned work; from a fourth edition of which, however, as we are informed in the preface, "The Essay on Morbid Sensibility" has been printed in a separate form, for the convenience of those who may be in possession of former editions merely, or who may not be inclined to possess themselves of the present. Being entirely new, and on a subject of almost

universal interest, we applaud the practice, as much as the principle, followed by Dr Johnson, in the publication of his essay. It is brief and to the purpose; and if we cannot say that he has thrown much new light on the difficult subjects he treats, yet we may safely aver, that he is throughout enlightened, consistent, and precise,—that his remedial means are energetic,—and that every line of his work displays the activity of a powerful and penetrating mind, always on the alert to profit by the discoveries of the day, and felicitous in the application of known facts to the illustration of the phenomena of disease, however obscure.

The dissertation itself is divided much in the way laid out in the title page; only, that the remarks on returning invalids commence the essay, and indeed form its introduction. Next follows the morbid sensibility of the stomach and bowels, extending from p. 41, to p. 86; and, in the last place, what may be reckoned a sort of third part, comprising the treatment, whether dietetic, medicinal, moral or physical, or peregrinatory[1]; in all, from p. 88, to p. 128. The whole constitutes a thin octavo, of a size that may easily be bound up with the work on the Diseases of Tropical Climates.

In the first part our author has judiciously contrasted the promise of health in the young adventurer setting out for warm climates, with that of the invalid on his return; and is at considerable pains to warn the latter of many sources of danger, which are commonly overlooked or unknown in a homeward voyage, even when undertaken for the recovery of health. Mankind, in their ideas of the salubrity as well as of the fatality of climates, commonly consider this effect merely in the aggregate; and would often expose themselves to extreme danger in the regions supposed healthy, if not duly admonished by their medical guides. The invalid who revisits, after ten years absence, the chalky cliffs and cooling breezes of his native Britain, thinks not of the death, that, to him, may lurk in their breath,—of the check which our hyperborean chilliness must oppose to the abundant secretion that has familiarly trilled for years adown his surface; and the inflammatory action, or at least irritability, that will thus be thrown upon the sympathizing prolongations of this surface, whether in the fauces, canals of the lungs, stomach, intestines or liver. The previously debilitated, and it may be also, the irritated state of his organs, contributes powerfully to predispose him to attacks on the above mentioned viscera.

[1] "By residence in a hot climate, the constitution becomes assimilated to it, and in some measure changed. The return, therefore, to a cold, though more healthy latitude, is liable to produce, if great care be not taken, mucous disease, and thus a more or less acute

inflammation is often set up in the mucous membrane of the bowels, or they are rendered more irritable than before the individual left India. A subacute inflammation of the liver is sometimes thus superinduced in a chronic disease or torpid state of that organ, requiring not only the subduction of the stimulus of food and drink, but even local abstractions of blood from the regions of the liver.

" But the most serious consequence of a return to Europe, after long residence in a tropical climate, is the aggravation, or even production, of *disease in the chest.* The mucous membrane of the lungs sympathizes readily with that of the stomach, and thus produces what is called a " stomach cough." Chronic disease of the liver produces the same thing. * * *. There is little or no *organic* disease of the *liver,* in one case out of twenty *(in nineteen cases out of twenty?)* of those who return to this country labouring under ' liver complaints'; and this remark is still more applicable to the stomach ; consequently, there is but little risk of life. But if the *lungs* once become affected in structure,—if *symptomatic* be confounded with organic derangement, or suffered, by neglect, to pass into that state, the case will rarely be otherwise than fatal."—Pp. 5, 7.

To escape this danger, Dr Johnson recommends that the invalid, " the moment he goes on shipboard, should pay the utmost attention to his dress, and most cautiously avoid all exposure to wet and cold on the voyage homewards. This caution is not less necessary for the invalid affected with the usual consequences of tropical diseases only, and where the chest is free at the time he embarks."

To avoid all mistake from ignorance in this respect, the author recommends the following mode of examination to the attention of the surgeon.

" The surgeon of the ship, therefore, should take an early opportunity of examining the chests of all invalids complaining of cough, or who are easily put out of breath on ascending ladders, &c. If they cannot lie low in bed, or take in a deep inspiration without exciting cough ; and, still more, if they feel uneasiness in any part of the chest, the case should be immediately attended to, before the patient gets into high latitudes, where the malady will certainly be increased. A blister, a few leeches, or a crop of pustules, excited by tartar emetic, aided by warm dress, abstinence from stimulating drink, and some gentle diaphoretic to act on the skin, would save many a day's suffering afterwards; nay, many a valuable life."—P. 7.

This we think judicious ; but we cannot so entirely coincide with our author's views in the following precept. After pointing out the bad effects of *motion,* and the *erect posture* upon dysenteric and other bowel complaints, he adds,

" The tropical invalid, therefore, should not be gadding about the decks on the voyage home, but confine himself a good deal to his cot or his cabin ; and, in wet or blowing weather, he should not

attempt to go from below, unless compelled by unavoidable circumstances."—P. 17.

From the very impure state of the atmosphere which always exists between decks, in the cleanest and best ventilated ships, we are inclined to doubt the universality of this precept in a long voyage, like that from India. Such animal effluvia as must prevail in situations of this kind, derange and obstruct the natural secretions of the skin, and are often the sole cause of bowel complaints; and, when they are not, much retard their cure. In short voyages, however, and rough weather, Dr Johnson's rule is liable to no exception but such as he has himself suggested.

The author proceeds to treat of the cure of those derangements of the alimentary tract, which are peculiar to the home-bound invalid. He lulls the irritability, from which he considers them mainly to proceed, by anodynes, aromatics, and bitter tonics. Astringents he condemns, and is cautious in the use of mercury. We long mainly to peruse what is said in his fourth edition of the "Tropical Climates" in this respect. We anticipate not a few alterations.

We will not deprive our readers of the pleasure of perusing the following paragraph respecting organic diseases of the liver; more especially as the Doctor applies the principle involved in it to the explanation of that gastric and intestinal tenderness, of which he afterwards has to treat.

"Organic Disease of the Liver.

"I may venture to assert from pretty ample experience, that not one in ten of those who are supposed to labour under 'Chronic Liver Disease,' as it is termed, on their return from hot climates, have any organic affection of that viscus, which can be detected by the most minute examination. It is really astonishing how many people are deceived,—medical men as well as their patients,—respecting enlargements and indications of the organ in question. There are very few who labour under derangement of the function in the liver or digestive apparatus, who have not *tenderness* on pressure, and an apparent *fulness* in the epigastric region, and under the false ribs of the right side. These symptoms alone are quite enough, in some men's mind, to entitle a tropical invalid, in particular, to the honour of having 'Chronic Hepatitis,' with enlargement of the organ. Yet, in nine cases out of ten, there is no such thing as organic disease in the case. The tenderness on pressure is infinitely more common, where there can be no suspicion of *organic disease* of the liver, than where this last is palpable to every eye. It is very common in the lighter shades, as well as in the higher degrees of dyspepsia, and arises from morbid sensibility in the nerves of the stomach and bowels, far more frequently than from change of structure, either in the liver or other contiguous organs. It is very often present, even where there is no *functional* affection of the above mentioned

viscera; but where there is an irritable state of the mucous membrane of the colon, where it sweeps round under the liver and false ribs: Nay, I affirm that this tenderness of the epigastrium, to which so much undue importance is attached, may at any time be induced by a dose of purgative medicine, that irritates the mucous membrane of the colon. There is, in fact, at all times, and in all people even in the highest health, a greater or less degree of tenderness on pressure at the pit of the stomach, most probably owing to the vicinity of the greater semilunar ganglion, or solar plexus, the *sensorium* of the abdominal viscera. What schoolboy does not know how easily he may be what is called 'hearted,' by a slight blow in that region? I repeat it, then, that tenderness *in epigastrio*, is an exceedingly fallacious sign, and no criterion at all of organic disease in the parts underneath.

"This natural tenderness at the pit of the stomach leads to another error very generally committed, namely, the belief that an enlargement of the liver exists. The moment that the fingers of the physician or surgeon are thrust against the parietes in this region, the abdominal muscles are thrown into action, and one of the rigid bellies of the rectus, on the right side, is every day mistaken for the edge of the liver. Of this mistake I have even seen numerous examples. No accurate judgment can be formed, till the patient is placed in such a position as entirely relaxes the abdominal muscles. In some people, indeed, it is almost impossible to get these muscles relaxed in any position, while under examination; as they are voluntarily or involuntarily thrown into action, the moment the fingers are applied to these parts. And, after this relaxation is obtained, a loaded state of the colon, no uncommon occurrence, will often deceive the incautious practitioner, and lead him to think he has discovered an indurated liver, which, in a few days, disappears under the use of aperient medicine!

"In respect to fulness of the epigastrium, there is much misconception. In corpulent people, no dependence can be placed on this symptom; while, in lean people, and especially in people who have become emaciated, as is often the case, the *fulness* is more *apparent* than real. In fact, almost all people who are naturally thin, or emaciated by ill health, there is an *apparent* fulness in the epigastrium, while in the erect posture, produced by the shrunk state of the abdomen. In some individuals the stomach is much larger than in others, and any distention of this organ, by food or flatus, will give an unnatural appearance of fulness to this region.

"*Pain* in the region of the liver, or indeed in the 'right side,' is another symptom which leads many astray. The biliary organ occupies a large space, and is surrounded by other organs and structures, much more susceptible of pain than itself. The intercostal and other muscles, the stomach, the duodenum, and different contiguous parts, are far oftener the seat of pain than the liver itself; and even when the seat of pain is in the biliary apparatus, it is more frequently in the gall bladder, or ducts, than in the substance of the organ. But *pain* is no proof of organic disease in any part of the body. The

most painful disease to which the human fabric is subject, *tic douloureux*, is unaccompanied by any visible change in the part, and often has its cause at a great distance from its apparent seat.

" In respect to a symptom which has been, time immemorial, considered as pathognomonic of liver disease,—*pain at the tip of the right shoulder*,—I acknowledge that it does, in a certain proportion of cases, exist. But, from what I have myself seen, and from an examination of the records of cases where dissection proved the existence of organic disease in the liver, I am confident that this symptom does not accompany *one-twentieth* of the disease in question; and that, when it does obtain, it is far more frequently an accompaniment of *disordered function*, than disease of structure. Neither is this pain in the tip of the shoulder, as is supposed. It is very often seated in the inferior angle of the scapula, nay, still lower down among the long muscles of the back. I have known it to continue long and troublesome, where the functions of the liver were but little affected, and where the case was evidently dyspepsia, dependent on irritability of the nerves of the stomach and upper bowels,—and it has disappeared under the use of medicines directed entirely to the dyspepsia. Why this part should be more frequently the seat of this sympathetic pain than other parts of the body, is by no means accounted for by any particular distribution of nerves. True it is, that there is no spot on the surface of the body, the nerves of which do not communicate, directly or indirectly, with the nerves of all other parts; but this does not account for the peculiar courses and directions in which sympathies run. Thus, *tic douloureux*, when dependent on irritation in the digestive organs, takes its seat very generally on the one side of the face, for which no satisfactory reason can possibly be given.

" *Pain*, then, whether in the region of the biliary apparatus, in the shoulder, or in the back, is no criterion of organic disease of the liver. It is more frequently absent than present in such disease; and, when present, it is more commonly dependent on *disordered function* of the liver or stomach, than on changes of structure in either of these organs.

" This symptom, by the way, is rather a sense of burning or aching, than actual pain. It is more felt when exercise is taken, than when the individual is quiet, and is very generally increased when the stomach is more than usually out of order, or when any temporary irritation of mind is kindled up.

" These are some of the principal sources of fallacy in regard to organic diseases of the liver, and often lead to unnecessary courses of mercury, and other medicines, that at least do no good, but sometimes much harm.

" What evidence, then, it may be asked, have we of change of structure in the biliary apparatus? If this organ can be felt protruding below the ribs, we can say it is *enlarged*; but of what that enlargement consists no pathologist can tell, unless he speak by guess. It may be tubercles,—it may be interstitial deposits in the parenchymatous structure, of various kinds und consistencies, or hypertrophy of the parenchyma itself,—it may be hydatids, &c.; but the

scalpel alone can unravel the true nature of the disease, and *then* it is little consolation to the owner of the organ; even should its portrait form a beautiful and expressive plate, or the diseased mass be preserved in that fluid which destroyed its original texture, and even life itself."

Dr Knox, our distinguished fellow labourer, whose fame as an anatomist must be well known to all our readers, has just given us a strong confirmation of this view of hepatitis (in which we heartily concur), so ably supported by Dr Johnson. At Hillsea Barracks, whither the invalids from India, Ceylon, and the Indian islands, used formerly to be sent, he dissected from forty to sixty bodies, said to be labouring under simple hepatitis, or hepatic dysentery, and of this number two only exhibited traces of organic disease of the liver!

In Part II. of our author's division, we have a regular treatise on the nature, causes, and treatment of dyspepsia,—a disease which the learned Doctor thinks better expressed under the denomination of "Morbid Sensibility of the Stomach and Bowels," (*i. e.* "ventral tenderness,") than under the many other appellations by which it has been, at different times and places, hitherto distinguished. As we conceive that name to be the best, which is applicable to the greatest number of individual cases of the disease, (for none will apply to all), we shall continue to employ the term dyspepsia as heretofore, except where it might throw some obscurity over the meaning of our author. At all events, dyspepsia is a shorter name; although, in Cullen's sense of the term, it does not include hypochondriasis in the way understood by Dr Johnson. We may just notice, in passing, that Dr Johnson seems to have misunderstood the definition of the latter disease, as given by that author. *Moestitia ex causis non aequis*, is not to be translated "fear from *uncertain* causes," but "fear from *inadequate* causes." We should not have noticed this, had we not observed it occurring twice, at least, in this essay; and, though originating in inadvertency, that it may be altered to the right sense in a future edition. We will not deprive the reader of the pleasure he must derive from the perusal of this part of the volume, by too minute an analysis of its contents. The general idea, however, of Dr Johnson's doctrine may be thus expressed.

The essential state of dyspepsia, hypochondriasis, and the cognate affections specified in our title, is that of increased sensibility and irritability of the mucous linings of the stomach and intestines, and generally of both together. This scarcely ever proceeds the length of *inflammation*, or of any other organic derangement, although it has been known, occasionally, after many years, to advance to this state.

But this increased sensibility may either be perceived by the mind, or it may remain unobserved by that part of our essence. It

may also subsist with or without obvious disorder of the stomach and bowels; and our author treats of these two different states under separate heads or classes. In short, the organs in question, particularly the stomach, are endowed with both kinds of sensibility, and suffer different affections, according as the one or the other species happens to be roused. In general, however, it is the "organic sensibility" only, (as Bichat has termed it), which is over excited in dyspeptic disease; and of this part the author offers the following very apposite illustration. He has been proving, that the healthy stomach has but little sensibility, and that the sensations which are perceived from aliment thrown into it are rather derived from other parts of the system, than from the stomach itself; in short, that, in a state of health, there ought not to be any *conscious* sensibility from the presence of food or drink in the stomach, and that to *feel we have a stomach at all, is no good sign.* He proceeds:

"The physiological action of food and drink on the stomach is shewn more on other organs and parts than in the stomach itself. When the quantity is moderate and the quality simple, there is nothing more experienced than a general sense of refreshment, and the restitution of vigour, if some degree of exhaustion were previously induced. We are then fit for either mental or corporeal exertion. But let a full meal be made, and let some wine or other stimulating liquor be taken, we still feel no distinct sensation in the stomach; but we experience a degree of general excitement or exhilaration; the circulation is quickened, the face shews an increase of colour, the countenance becomes more animated, the ideas more fluent. This excitement from food and drink, however, is not only transient, but it is, moreover, partial. In proportion as we have excited the ganglionic system of nerves, or, in other words, the involuntary or vital organs (stomach, heart, &c.), we disqualify the voluntary muscles from action, and the intellectual system for deep thought, and other mental operations. In fact, we are then only fit to sit and talk very comfortably over our wine, and ultimately to go to sleep. Whether this habit, which is that of civilized life in general, be that which is best adapted for preserving or regaining health, is a question which I shall presently discuss; but, in the mean time, it will be sufficiently evident that pleasurable sensations are diffused over mind and body by the presence of food and wine in the stomach, *without the existence of any distinct sensation in the stomach itself.* This is an obvious truth, and it is of great importance to remember it. For, if the nerves of the stomach, *in a state of health,* be capable of exciting pleasurable emotions in the mind, and comfortable sensations in the body, on the application of good food and generous wine, we shall find that the same nerves, *when in a disordered state,* are equally capable of exciting the most gloomy thoughts in the mind, and the most painful sensations in the body, on the application of the very same species of refection, either with or *without* an unpleasant sensation in the stomach itself."

This morbid sensibility, then, which he mainly refers to irritation of the great ganglionic centre of the epigastrium, is excited by a great variety of causes, physical, morbid, and moral; in short, by that long catalogue of contingencies to which, in an especial manner, the members of civilized society are subject, and which are acknowledged by all physicians to contribute to the production of the affections in question. One point, however, our author has not, we think, laboured with his general impressiveness,—the effect of exercise and active habits in *warding off* these affections: and he perhaps leans a little hard upon the upper orders of society for their indulgence at table, which, we are convinced, is much less extravagant than that of the labouring classes, whether we respect the quantity or quality, *stimulating* or *fermentative*, of their meals. In fact, the former not having the same daily waste of corporeal matter by perspiration, nor the same salutary exercise of the muscles, communicated by sympathy to the fibres of the stomach, nor the same mechanical impulse to the peristaltic motion, from vehement contraction of the abdominal muscles,—possess neither the same avidity in their absorbent system, nor the same quantity or quality of gastric juice for solution, nor the same active propulsion of the alimentary mass, and its residue. If we add to this, that the operations of mind among the lower orders, are not of that energetick character which our author has so graphically described as obtaining among those in better circumstances, and that the patients of this order are the most likely to consult a physician,—we shall see that many reasons conspire to produce the impression made on Dr Johnson, that such complaints are almost confined to affluent circumstances. But though the majority of dyspeptic patients undoubtedly lies on that side, yet almost every dispensary physician in the three kingdoms will assure him, that they are very frequent among the poorer classes of society. Our late ornament, Dr James Gregory, was accustomed, in his jocose manner, to denominate them "the daily bread of the physician." Throughout the whole of the eastern and middle districts of England, south of the river Wear, apple-pie forms an indispensable in the poorest labourer's daily fare; and he who has only chemistry or experience enough to know what must happen in a stomach into which this mass of paste, butter, and sugar is thrown, along with their own poor "home brewed" beer, will be at no loss to account for the frequency of dyspepsia in that quarter: the same may be predicated of the Irish potato and Scottish oatmeal: and if the Hindoos make use of saccharine or fermenting potations, we doubt not in the least but that they will confirm our rule. Dr Johnson has, however, pointed out the utility of exercise as a means of cure in a very forcible manner.

In treating of the causes of dyspepsia, Dr Johnson has also dwelt rather lightly on the influence of fermentation in generating this affection. He is aware of the influence of acid in keeping up the morbid sensibility which he supposes to constitute the essence of this disease, but he never seems to have asked himself why this simple ternary oxide is found to possess such intense power,—while vinegar, which is probably the identical acid, and even dilute sulphuric, or muriatic acid, are often found to banish the same symptoms, which it so evidently creates? Why so much distress is produced by a mild substance, whilst a much stronger stimulus, brandy, is recommended, and properly recommended, by himself, as a means of cure? The answer, however, to both these questions is easy, and is deduced at once from the existence of fermentation in the first passages. That the acid then generated, is the cause of the morbid sensibility, and not the mere fermentation, (as the late celebrated Dr Gordon seemed to imagine), is proved, first, by the instant relief experienced from antacids, though these do not suspend fermentation; and, secondly, by those fermentations being most painful which generate most acid. Hence it is easy to see, that the longer the fermentative process continues in the stomach, the more acid will be generated, and the more mischief produced: and that food, or habits, maintaining this action in the stomach and intestines, afford a perennial fountain from which the noxious fluid, the immediate cause of the complaint, will continue to be generated. Hence, also, we discover the reason why small doses of acids are tonics, because, being at once taken up into the system, by absorption, as demonstrated by the numerous experiments of Magendie and other physiologists, they do not remain in contact to molest and irritate the coats of the stomach, but, mingling with the blood, produce their specific corroborating effects upon the system. The acid of fermentation, on the contrary, is indeed *partly* absorbed, but being formed faster than can be removed by that process, remains as long in contact with, and does nearly as much mischief to the mucous membrane, as if it were not taken up at all,—and thus preserves a perpetual morbid tenderness of the alvine tissue. Hence, in fine, appears the reason why mustard, pepper, caper, curry powder, brandy, a thousand acrid stimuli, are every day taken at meals, with evident advantage, in spite of the doctors. Their stimulant effect upon the stomach is evanescent, and, so far as they call forth a subsidiary flow of gastric juice, beneficial; and, indeed, only hurtful when the quantity taken has been so great as to exhaust the secreting surface, or to overexcite the whole system. From this view, also, we ought to conclude, that the fluid stimulants, as being the most rapidly diffused, are the fittest for meals. Still, if the quantity of these,

or of acids taken, exceeds what is readily absorbed, they become mingled with the alimentary mass, and acquiring thus, by its capillary attraction, a locality in the stomach, irritate and excite every fibre of it with which they come in contact. Hence the false appetite after drinking, the *diarrhoea crapulosa* of debauchees, and the intolerable headache, fetor of breath, and gastric saburra of—" next day." The gaseous distention which occurs in dyspepsia, is painful or pleasant, according to the state of the stomach, or the irritability of the heart; and when the aërial products thus generated have been expelled by contractions of the stomach or belly, however induced, the relief is more or less according to these states, and to the urgency of the remaining sources of fermentation in the stomach.

One other point, also, we found rather slightly passed over, not that it was to be met with in books, but that we expected it to have occurred to a pathologist of the caliber of Dr Johnson, who has himself been so long a martyr to these complaints; for the " Disciplina literarum corpori inimica,"—as we learn from the present valuable little volume, numbers Dr Johnson among her victims, as well as her votaries. We allude to that vast and immediate connection which exists between the circulation of the stomach and intestines, and that of the liver. The WHOLE OF THE BLOOD OF THESE ORGANS, together with that of the spleen and pancreas, circulates through the mass of the liver in its return to the heart, and cannot therefore be any how increased or diminished, but the activity of the liver, and its secretions also, will be increased or diminished in the same ratio. Whether, therefore, the bile be a joint product of the hepatic artery and portal vein, or, as is more probable, of the latter only, or even, as some few have formerly supposed, of the hepatic artery alone, still the quantity of this secretion must be augmented by an increased supply of portal blood to the liver. This is the great law of secretion in all the organs of the body, that, *cæteris paribus*, their supply shall be in proportion to the supply of blood; and the fulness of anastomosing vessels always increases the fulness and activity of those wherewith they anastomose. Hence it follows, that every particle of curry powder, of wine, or brandy, which, by its stimulating nature, brings a globule more of new blood to the stomach by the gastric arteries, must return that blood, *and return it with a corresponding velocity*, through the liver, by the gastric and portal veins, in its way to the heart. Who, then, can wonder at the eternal sympathy, as it is called, between the stomach and liver? We may as well affect astonishment at the alternate action of the auricles and ventricles of the heart; or, to come nearer the question, at the mutual sympathy of the stomach and intestines. You cannot irritate the stomach or bowels, but you must irritate the liver in

nearly* the same ratio; you cannot obstruct the liver, but you obstruct the circulation, and consequently accumulate the irritability, and increase the volume, of the stomach, spleen, pancreas and intestines, in the same ratio. By this wise provision, bile, so necessary for digestion, is ready to pour forth in profusion, when nature almost trembles for the consequences of those debauches into which we are plunged by our follies or our ignorance; and the biliary stools, in fact, the bilious diarrhoea, which often ensues for some days afterwards, afford abundant proof that the means are more than adequate to the end. With this relation of the parts before our eyes, we have a ready explanation of the connection between alvine, hepatic and gastric disease; and it may be also an explanation of that fulness and soreness of the "epigastric centre" which the pupils of the school of Montpellier so readily attribute to the engorged and irritated state of the ganglionic system there accumulated. In short, the consequent enlargement of the pancreas, which nature often relieves, in this state, by an extraordinary discharge of its mucus, may be the sole origin of the sensation felt, and may excite that sensation by simple mechanical pressure. It is hardly necessary to observe, by way of elucidation, that the more blood flows into the great portal vein by the gastric and mesenteric roots, the less will be able to enter it from the pancreatic and splenic veins.

But with this interesting author, and this important subject, we must conclude, however abruptly. His plan of cure is such as has been adopted by all the *talented* part of the profession in this place for at least a dozen years back; and is, in most points, the best possible. He points out the mischief of the indiscriminate employment of tonics and purgatives, and of aliment which may generate acid in the stomach; and the good effects to be derived from *disengaged* travelling, exercise, and regimen. Nitrate of silver he has found of much use in cases combined with epilepsy, or spasm; and he adds some useful hints on the gastric forms of falling sickness. He thinks, however, that, on the whole, the sulphate of quinine is the only necessary bitter. He insists largely on the utility of mental relaxation, and if not hilarity, at least of indifference. We desiderate among his remedies the use of the cold bath, shower bath, frictions, cold sponging, galvanism, and exercise within doors; from all of which we have witnessed the most unexceptionable cures. Dr Johnson has also omitted, in the present form of his dissertation, to

* If the French physiologists are right in their assertion, *which has never been disproved*, that the alimentary matter is chiefly absorbed by the roots of the portal vein, then the irritation of the liver must amount to a great deal *more* than that of the recipient organs.

refer us, as he so well could, to the sources whence many of his most novel ideas are derived, where they might be found more fully developed. But we are thankful for what he has given us; and devoutly wish that his practice were only more universally adopted than we ever expect it to be, in our own time. The cure of dyspepsia involves too profound a knowledge of physiology and pathology, ever to be duly studied by the *routineer;* and it yields so often, for the time at least, to miscellaneous remedies, that the patient himself will never be sufficiently able to recognize the physician who truly understands his case. Dr Johnson, however, has added to the facility with which both may acquire the necessary knowledge; and we earnestly and finally advise them both to avail themselves of his labours.

Outlines of Lectures on Mental Diseases. By Alexander Morison, M. D. of the Royal Colleges of Physicians of London and Edinburgh, Physician in ordinary to his Royal Highness the Duke of York, Physician Extraordinary to his Royal Highness Prince Leopold, Inspecting Physician of the Surrey Lunatic Houses, &c. &c. Second edition, with thirteen Engravings. 8vo. Pp. 150. London, Longman, Rees, Orme, Brown, and Green, 1826.

"THE care of the human mind belongs to the practitioner of medicine. It is the most noble branch of our office." So says the acute and accurate Gaubius; and it would be so, indeed, if our success were at all equivalent to the grandeur of the effect to be produced,—the restoration of the immortal part of human nature to the proper exercise of its functions; to those amazing attributes, by which, with the lightning's velocity, it doth glance from heaven to earth, from earth to heaven, and approaches, by near gradations, the celestial natures that minister to Deity. But, alas! it is here our nobility ends; and so well assured do mankind seem of the general infelicity of our attempts, that, till very lately, a "mad doctor," and a kind of bastille gaoler,—one whose best office was humane treatment to a prisoner for life, were, in the ears of most persons, synonymous terms. The late parliamentary inquiry into the state of madhouses, the interest created by the appearance of the disease in high places; the belief of its increasing frequency, together with the real advance of civilization, and the many ingenious writers on the subject, have at last roused the attention of the thinking part of mankind, and

given that consequence to inquiry and experience in this department, which was superciliously denied to it in former years. "Treat them as you will," it was said, "they will still continue mad; and it may fairly be doubted, if they who hope for better, are in reality much wiser than their patients." The ingenious and intelligent physician, whose work lies before us, has for many years devoted his attention to diseases of the mind; and is the present incumbent of a lectureship, lately founded, for the benevolent purpose of promoting their elucidation. The book, indeed, is neither more nor less than the heads or outlines of the lectures delivered by him, in consonance with this engagement. The following passage, extracted from the preface, will afford the reader some idea of the method, perseverance, and opportunities for observation, which distinguish the labours of Dr Morison.

"In the course of lectures, of which the present publication is an outline, I endeavour to give, in as condensed a form, and in as perspicuous a manner, as I can, a general view of the brain, the organ of intelligence, and of the nervous system:—a concise description of the faculties, or modes of acting, of the mind in its sane state:—of the most striking phenomena of its various aberrations, including its passions and its delusions, with and without consciousness; and to characterize (as distinctly as the present state of our knowledge permits) the insane state in general, and its various divisions, viz. Febrile Delirium, General Insanity, Partial Insanity, Fatuity, Idiotism, and Imbecility.

"I endeavour to draw attention to the incipient stage of insanity, the knowledge of which is of so much importance to the prevention and cure of the disease, and to the mode of treating the insane state in all its forms, by medical and moral means; pointing out the advantages and disadvantages of public and of private seclusion, with the means of restraining the furious, encouraging the timid, employing the tranquil, and counteracting disordered inclinations and affections, and the discrimination necessary to adapt them to each individual case.

"I describe the various causes, which, either directly or indirectly, tend to produce insanity, as stated and defined by those who have preceded me in the inquiry, together with the result of my own observation and experience; and notice the various points to which medical testimony may be required in doubtful cases of madness and of imbecility, as well as the means of improving the condition of the imbecile; and, what is of the most anxious consideration to parents, whose children unfortunately derive from them an hereditary disposition to mental derangement, viz. the mode of education most likely to counteract it, or to lessen the frequency of its occurrence. I likewise notice a variety of subjects connected with nervous disorders affecting the mind, but not amounting to insanity.

"The sources whence the materials of the lectures have been derived, are numerous: they have been verified, as far as possible, by extensive observation and inquiry in many hospitals, for the treat-

ment of the insane at home and abroad; and the opportunities afforded by seventeen years' inspection of the Lunatic Houses in the county of Surrey, the performance of which duty has been considered deserving of the unanimous thanks of the Magistrates."—P. 3, 4.

Besides what is here stated, Dr Morison has profited largely by the writings of the French physicians, who have indeed laboured assiduously in the cultivation of this branch of medicine. We know it is unfair to compare what is confessedly a mere outline, with the regular treatises which have been written upon the same subject; and shall therefore content ourselves with saying, that the present work sufficiently fulfils the plan laid down by the author in his preface, abounds in many valuable observations, and must be of indispensable utility to those who attend his prelections. Of these the sketch delivered serves to impress us with a very favourable opinion. We mean, that his research appears considerable, his doctrines rational, and in no instance hastily taken up. He adopts the nosological arrangement of insanity delivered by Pinel, and afterwards modified by Esquirol; thus,

Mania, or general insanity.
Monomania, or partial insanity.
Dementia, or fatuity.
Idiotism.—P. 41.

The stages into which he thinks the progress of insanity generally divides itself, are as follows:

1. An incipient stage.
2. An active or confirmed stage.
3. Decline and convalescence, or termination in the incurable state.

The following extract comprehends his character of the incurable stage.

"TERMINATION IN THE INCURABLE STAGE.

"In general, the approach of this is gradual. Sometimes, however, it takes place rather suddenly; in which case, palsy usually precedes or accompanies it.

The signs are,—a state of quietness and dulness succeeding the agitation and fury of the active state,—the sleep restored without improvement of the faculties,—unmeaning laughter, and incoherent discourse. When these occur, there can be little doubt that the disease is incurable.

On the causes of insanity Dr Morison has some interesting remarks.

"Education without the controul of religious and moral principles, which does not repress ideas of a hurtful tendency, but encourages false romantic notions and ideas above the rank in life, is a pretty common cause of insanity." "Religion influences its pro-

duction most in temperate climates, in countries not catholic, and where latitude of religious opinion is permitted: free governments and political commotions being favourable to the production of insanity, while despotic governments are not." "The two extremes of civilized society furnish the greatest relative number of insane." —Pp. 68, 70.

The number of insane in Scotland Dr Morison proves to be about 5000: and supposing, as is probable, that the proportion is not less in England and Ireland, we shall have about 45,000 for the average number of persons so afflicted in the British Islands; or about 1 person in 400 of the population,—p. 72. He knows no proof of its being on the increase,—p. 73.

Dr Morison considers that the proximate cause of insanity must depend on very slight derangement of the organization. Were it otherwise, the disease would probably not be susceptible of cure; hence it is not surprising, that, in the early stage, we cannot trace any morbid appearance. Nothing decisive has been obtained by dissection. The plan of cure is too slightly sketched to afford us any useful extracts. Suffice it to say, that temperate soothing treatment, and a careful attention in subduing morbid symptoms, constitute its substance. Dr Morison seems to be no favourer of nostrums in mental affections.

PATHOLOGY.

A Manual of Pathology, containing the Symptoms, Diagnosis, and Morbid Character of Disease; together with an exposition of the different Methods of Examination applicable to affections of the Head, Chest and Abdomen. By L. Martinet, D. M. P., Resident Physician of the Hôtel Dieu. Translated, with Notes and Additions, by Jones Quain, A.B., Demonstrator of Anatomy at the Medical School, Aldersgate Street. 12mo. Pp. 310. London, Anderson, 1826.

For an account of the French edition of the present useful little companion to the hospital, we refer our readers to our last number, page 447. We had then only leisure to glance over the translation of Mr Quain, which we pronounced respectable. So strong, however, has been the impression upon us of the general utility of the work to all persons any how concerned with opening and reporting upon dead bodies, that we deem it no more than justice to the industry of the author, and the valuable

additions of Mr Quain, to resume the subject. This, to be sure, is but a secondary appendage of our main object. We wish to impress our readers with the necessity of all hospital assistants, whether naval, military, or civil, all hospital surgeons, house surgeons, hospital dressers, and apothecaries, possessing themselves of Martinet's Manual. It contains excellent directions for opening bodies; a succinct and very intelligible account of the acoustic pathology of the chest, discovered by the late lamented M. Laennec; a very respectable outline of the symptoms indicating each morbid derangement, and indeed each disease, and the actual organic derangements, as they appear on dissection, in clear and perspicuous language. M. Quain has every where added what seemed wanting in the two latter respects. The characters ascertained by the stethoscope are every where added; and we scruple not to affirm, that the only way in which a confidence in the use of this valuable auxiliary is to be acquired is, when, in the observation of cases, the evidence it affords is mixed up, compared with, and confirmed by the collateral testimony of other symptoms. Nay, we believe not a few have revolted from its use, in consequence of the opposite and more common mode of putting its utility upon trial.

The age at which young persons are admitted to assist in hospitals, the onerous part of the dissections which is, generally, intrusted to them in those institutions, the length of time, and the extensive anatomical knowledge necessary for a *previous* fitness for this office, are, in our way of viewing the subject, unanswerable reasons for the candidate for such offices being supposed to be in possession of the contents of the present volume: a qualification which the dispensers of these offices know well how to insure. The signs of organic lesion are every day mistaken by the best informed practitioners, from error in their previous education. M. Quain has been careful to amplify the description of these wherever it was necessary. As a specimen of these additions, and of the notes at the bottom of the page, we subjoin his account of "Pulmonary Catarrh." By comparing it with the French, it will easily be seen that he has spared no pains to improve upon his original.

"Pulmonary Catarrh.*

"Catarrh, considered as an inflammation of the pulmonary mucous membrane, is divisible into two stages, the acute and chronick. Its degrees of intensity vary from the slightest cough to such a derangement as makes it resemble phthisis in almost every particular.

* "This chapter is somewhat too brief in the original; I have therefore written it anew, or rather compiled it from the first volume of Andral's work.—T."

It begins with irritation in the throat, and dry cough; but, after an interval, which varies according to the constitution of the individual, or the treatment resorted to, each fit of coughing is followed by the expectoration of a clear, transparent glairy mucosity, somewhat similar to the white of an egg; the greater the degree of inflammation in the mucous membrane, the greater is the viscidity and tenacity of its secretion. When the patient is seized with violent fits of coughing, accompanied by a sense of heat in the interior of the chest; by general anxiety and oppression, the expectorated matter acquires a degree of viscidity, somewhat approaching the glutinous sputa of acute pneumonia.

"In the midst of this transparent matter, we sometimes find several small particles of a dull white colour, which have been frequently mistaken for portions of pulmonary tubercle, and therefore indicative of phthisis.* They do not, however, come from the lungs; they seem to be secreted in the mucous cryptae of the pharynx and fauces. Whilst the expectoration presents these appearances, the symptoms of bronchial irritation remain unabated; but according as this tends to resolution, the sputa progressively change their character. The mucosity of which they consist, by degrees loses its transparence, becomes mixed with opaque yellow, white, or greenish masses, which, at first few in number, gradually increase, and ultimately constitute the whole of the expectorated matter. This change is generally accompanied by a perceptible remission of the symptoms of the acute affection, indicative of its resolution.

"When the disease, instead of thus terminating, passes into the chronick form, the sputa retain the same appearance as in the latter period of the acute stage. They are opaque, white, yellow, or greenish; they sometimes adhere to the bottom of the vessel; at others they float in a transparent mucosity, or are suspended in the midst of it. They are generally inodorous, and to the patient insipid; and in most cases expectorated with difficulty.

"Thus the expectoration resembles what is very commonly observed in phthisis; the respiration, too, is short and frequent; there may be night-sweats, and a considerable degree of marasmus. Under such circumstances, none of the ordinary modes of examination are sufficient to distinguish chronick catarrh from phthisis; the stethoscope alone can furnish signs really pathognomic; and these vary according as the catarrh is dry or humid. In the former there is a feebleness, or even total absence of the respiratory murmur, in parts of greater or less extent, of the affected lung. This, however, is not constant; it changes almost incessantly, so that the respiration becomes distinct in the parts where it had but a moment before been inaudible, and ceases to be heard where before it had been dis-

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"* If there be any doubt as to the nature and origin of these substances, it can readily be satisfied by placing some of them, on a piece of paper, and exposing them to heat. If they are merely sebacious matter from the mucous cryptae, in the fauces and pharynx, they will leave on the paper a greasy stain, which effect will not be produced if they are tubercular matter from the lungs.—T."

tinct. These effects are produced by the altered bronchial secretion momentarily stopping up the air-tubes in some places; and, of course, they cease when the impediment is removed. This state of the respiration is accompanied by '*râle sonore*' and '*râle sibilant**;' the former is little liable to change its seat; the latter, on the contrary, is very variable. It disappears for a while, probably after an effort of coughing, then suddenly returns with the same intensity as ever. Sometimes, however, both are constantly strongly marked, and occupy the greater part of the organ, which indicates that the affection is extensive and violent.

"Acute catarrh may be confounded with emphysema of the lungs, and with croup; chronic catarrh presents several of the characters of phthisis.

"*Anatomical Characters.*—On opening the body of a patient, who has died of any affection, during the course of which he had been attacked by acute catarrh, the mucous membrane is found red, to a greater or less extent. This most usually occurs towards the end of the trachea, and in the first division of the bronchi. In very severe cases it may be found even in the smallest ramifications. If it is confined to the bronchi of one lobe, it is rather remarkable that those of the superior lobe are most constantly affected.

"In some cases the membrane seems as if finely injected; in others there is no appearance of vessels; we see merely a number of small red points aggregated closely together. Finally, the redness may be confined to particular spots of various forms, constituting so many distinct inflammations, between which the membrane is white and healthy.

"This bright redness disappears in chronick cases, and is replaced by a livid, violet, or brownish tinge, but this is not an invariable occurrence. Bayle and Andral report cases of inveterate chronick bronchitis, with puriform expectoration, in which the membrane scarcely presented any trace of redness, or, as was even in some instances, perfectly pale in its entire extent.

"The small bronchial tubes, particularly those towards the summit of the lungs, are occasionally found dilated in some parts, so as to be considerably larger than in the rest of their trajet, which may increase to such an extent as to emit a real pectoriloquy.—*See Andral*, ii. p. 29. T."—P. 165–8.

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* "The '*râle sonore*' is permanent in its duration, because it depends on a change of structure either in the bronchia, or their lining membrane; the '*râle sibilant*' is variable, because it depends on a viscid secretion plugging up the bronchial tubes, which are constantly liable to be displaced and expectorated."—T.

Recherches Anatomico-Pathologiques sur la Meningite aiguë des Enfans, et ses Principales Complications, (Hydrocephale aiguë des Auteurs). Par L. SENN (de Geneve), Interne des Hôpitaux de Paris. 8vo. Pp. 150. Paris, chez Gabon, 1825.

Researches upon the Acute Meningitis, or Hydrocephalus, of Children. By L. SENN, House-Surgeon of the Hospitals of Paris. 8vo. Pp. 150. Paris, Gabon and Co. 1825.

THE above interesting little sewed pamphlet was put into our hands some time after its publication, but it is only at the present moment that we have been able to overtake it. The facts presented by M. Senn go chiefly to demonstrate, that inflammation of the arachnoid membrane of the brain, is the chief cause of the disease named Hydrocephalus in children; and as his work is dedicated to M. Guersent, the distinguished physician of the *Hôpital des Enfans* of Paris, of which the author is a domestic assistant, and in which the dissections were conducted, we think the latter may be considered as fully entitled to our confidence.

The inflammatory nature of acute hydrocephalus has, we believe, with one exception, been annually taught in this University for the last forty years, and is consequently known universally over Britain, though it seems to have been but little understood on the Continent, or at least in France, before the publication of the famous work of Coindet on Hydrocephalus, in 1816. Since that time the theory of the dropsical origin of hydrocephalus has been on the wane; and the writings of Quin and Rush of the old school, and the recent labours of Coindet, Abercrombie, Mitivié, Lallemande, Martinet, (they seem to know nothing of Golis), have at length taught them to look for the original seat of the malady in the increased action of the vessels of the encephalon, and its consequences. Still our author thinks, that, before the publication of his work, the increased action, or its consequent inflammation, disorganization, &c. were too frequently referred to the cerebral mass, while the state of its membranes was almost entirely neglected; and to establish this point, and the identity of hydrocephalus with meningitis, or inflammation of the cerebral envelopes, is the whole scope of his treatise. In support of this opinion, he details twelve cases, with their dissections, the latter of which are delivered with great precision, though sometimes rather briefly. Indeed, we have every day occasion to lament this miserable affectation of

"Hippocratic brevity," in the medical descriptions of our brethren across the Channel; an affectation the less entitled to quarter, that it is a perversion of the natural genius of their nation, and of that lively and graphic flexibility of dialect, which has made the language they speak the delight of all the nations of the civilized world. Our author, after these, proceeds to consider inflammation of the encephalic membranes in general,—the frequent complications of meningitis,—then what he calls "*lesions cadaveriques*," which are nothing more than the essential or cardinal lesions, which establish, with certainty, the presence of meningitis. Then he treats of the diagnosis,—of the causes of inflammation of the encephalic membranes,—of the prognosis,—and concludes, as behoves the publisher of a new view of the nature of a disease, with his plan of treatment. We subjoin the enunciation of each of the twelve cases, and the dissection of one of the cases, as given in detail.

"Case I. Eight and a half years old, strong constitution; attack sudden, headach, agitation, constipation, delirium, convulsive movements, trismus, collapse, slight opisthotonos, respiration rattling; death on the sixth day. *Intense meningitis (inflammation of membranes), false membranes, slight gastritis.*

"Case II. Six years; sick for three months, headach, bilious vomiting, anxiety, constipation, somnolency followed by convulsive attacks, hydrocephalic screams, collapse, opisthotonos; mind steady, but the breathing more and more difficult: death on the 15th day. *Meningitis of the base.*

"Case III. Eight years; good constitution; sick for the last three weeks; headach, bilious vomiting, constipation, anxiety, depression, suspirious respiration, delirium, somnolency, increasing weakness: death on the 15th day. *Meningitis of the base, slight gastro-enteritis.*

"Case IV. Five years; intense cephalalgia, bilious vomiting, constipation, irregular respiration, screaming; symptoms of gastro-intestinal irritation, momentary relief from bleeding; collapse, slight opisthotonos, trismus, convulsions: death on the 12th day. *Meningitis of the base, gastritis, cystitis.*

"Case V. Six years, strong constitution; headach, general convulsions, great irritability, sopor, trismus, fresh convulsions: death on the 6th day. *Intense general meningitis; encephalitis of the middle parts between the two hemispheres, namely, the corpus callosum, septem lucidum, fornix; slight gastritis.*

"Case VI. Two and a half years; conjunctiva affected with a copious purulent discharge; disappearance of this symptom, general restlessness, irascibility, convulsions and contractions of the right limbs; intermission; second attack lasting twelve hours, gradually increased weakness: death on the 6th day. *Meningitis, encephalitis of the left hemisphere.*

" Case VII. Eleven years; sickly, bronchial catarrh, vomiting, headach, delirium, impossibility of supporting light, respiration unequal, and sighing; *acute sensibility of the integuments of the trunk;* somnolency, mind distinct, respiration impeded: death upon the 8th day. *Meningitis of the base, encephalitis of the middle part, pulmonary tubercles, chronic enterocolitis.*

" Case VIII. Age eleven, good constitution; fear, anxiety, vomitings, headach, *acute sensibility of the integuments of the trunk,* irregular respiration, delirium, prostration of strength, collapse: death the 8th day. *Slight meningitis, encephalitis of the middle parts.*

" Case IX. Age seven years; bilious vomiting, acute frontal headach, somnolency, contraction of the muscles of the right side, irregularity of the respiration, screaming; mind distinct, increase of these symptoms ineffectually combated by bleeding and emetics; symptoms of abdominal irritation: death upon the 9th day. *Meningitis of the base; encephalitis of the left corpus striatum, and cerebral tubercles; peritonitis; slight gastritis.*

" Case X. Eleven and a half years old, feeble constitution; chronic pneumonia and enterocolitis, vomiting, cephalalgia, irregularity of respiration, collapse, *acute sensibility of the integuments,* progressive weakness: death upon the 10th day. *Meningitis of the base, encephalitis of the middle lobes, ventricular effusion, chronic pneumonia, and chronic gastritis, passing into the acute state.*

" Case XI. Eleven years; weak constitution, sickly; headach and bilious vomiting, obstinate constipation, collapse, rigidity of the superior extremities, irregularity of respiration, nocturnal exacerbations, agitation, delirium, *extreme sensibility of the integuments,* prostration, rattling respiration: death on the 19th day. *Meningitis of the base, slight encephalitis of the hemispheres, encephalitis of the middle parts, effusion.*

" Case XII. Three years of age; sickly, headach, bilious vomiting, followed by collapse, with slight opisthotonos and trismus; retraction of the muscles of the right side: death on the 16th day. *Meningitis of the base, slight encephalitis of the hemispheres, especially towards the left side and middle parts, ventricular effusion, tubercular pneumonia, softening of the stomach and esophagus."*— Pp. 1—70.

On reviewing these outlines of the cases examined by M. Senn, it is evident, in the first place, that the disease he treats of is the Hydrocephalus acutus of British authors; and it is equally evident, that, of the twelve, three only exhibited effusion into the ventricles after death, and that even these three were accompanied by inflammation of the membranes and substance of the brain. M. Senn thinks that the *peculiar tenderness and sensibility of the integuments,* marked in some of the above cases, is the only certain mark of encephalitis of the commissures, or " middle parts;" and he depends upon this as a sufficient diagnostic. As to ventricular effusion, he considers (p. 95) that

this almost always is the result of inflammation. He allows, however, that it *may be* otherwise, though so very rarely, that the many dissections of the kind reported, can only be explained by supposing the anatomist ignorant of the characters of cerebral and meningeal inflammation. Slowness of pulse, opacity, and softening of the cornea of the two eyes, appear to him the most constant indications produced by the effusion of a serous fluid into the ventricles. Dilated pupil, and blindness, he considers much less certain.

The prognosis of our author agrees with that generally admitted, that the third stage is invariably fatal.

His treatment consists in general and local bloodletting, refrigerants, and derivatives. The latter comprehend diaphoretics, purgatives, and sialogogues. From the last mentioned he has never derived any benefit in the *Hôpital des Enfans.* But for the minor details, the reader may consult the original work at a very moderate expense.

Remarks on the Merits and Present State of Vaccination, wherein the Objections of the Antivaccinists are considered. By Robert Lewins, M. D. &c. 8vo. Pp. 80. Edinburgh, Constable & Co. 1825.

Sick of the interminable *facts* of the antivaccinists, which, from a thousand mouths, amount in reality to one thing,—*that vaccination, especially if not carefully looked after, becomes occasionally, though rarely, ineffective; and that the varioloid disease, which, not quite so rarely, shews itself after legitimate vaccination, is not so mild as has been stated, though scarcely ever fatal,*—we shall devote but a short space of our diary to the consideration of the present work, which, generally speaking, is but the echo of our own sentiments, and those of nineteen-twentieths of the medical public. With the other orders of society we have little to do, except, perhaps, when the superannuated dosings of some Scotch judge, or the more profligate preachments of some Scotch advocate, calls forth our animadversions under the head of Medical Jurisprudence; or when some great body of the state, or the state itself, embraces a line of action inconsistent with the health of individuals, or the welfare of that science, of the advances of which it is at once our province and our pride to bear record. But the case is very different with Dr Lewins. Situate as he is, at Haddington, in the very focus of the largest group of rusticating Scotch aristocracy that is any where to be

met with, the daleway of the Tay not excepted; and finding, in his daily intercourse with such persons, the progress made by what he believes to be heterodox and dangerous doctrines with respect to vaccination; it was natural for him to endeavour to furnish those who honoured him by their confidence, with the grounds of his own belief; and with some more cogent arguments for the change he so ardently desired in their sentiments, than he could in fairness be expected to deliver in the brief course of a chamber consultation. This is the whole scope and object of the author, as he has told us in his preface.

"It is to the general reader, and, especially, to parents and guardians of children, that I address myself. If my essay shall prove at all instrumental in confirming the faith of the wavering, or in restoring to the cause I advocate, however feebly, that undoubting confidence which would never have been shaken had men taken reason for their guide, I shall fully attain *the only object* I contemplated in its composition, the good of the community."—P. vii.

In entering upon this task, Dr Lewins gives,

"A Cursory View of the History and Effects of Smallpox.—Sect. I.
"A Succinct History of Vaccination.—Sect. II.
"The Objections of the Antivaccinists considered.—Sect. III.
"Explanation of the Cause of Apparent Failure of Vaccination.—Sect. IV.
"Remarks on the Present State, and Protecting Power of Vaccination.—Sect. V.
"An Examination of the proposed substitution of Variolous for Vaccine Innoculation.—Sect. VI.
"Appendix—Reports of Edinburgh Vaccine Institution—Effects of Vaccination on General Mortality."

This is a division which has, at least, the merit of being clear, and the order in which the sections follow each other is such as seems most likely to satisfy the very reasonable persons he addresses; persons who by no means refuse "to take reason for their guide," as our author suggests in the passage above, but who labour under a lamentable paucity of facts, whenever they set about reasoning upon medical subjects, and consequently, only arrive, by a species of chance, at conclusions which are not erroneous. With them it is singular good fortune to be in the right. But, in the present instance, we are by no means disposed to question their claim to the privilege of doubting, and hesitating, when they find medical persons, well informed upon the same subject, doubting and hesitating also. A parent or brother has rather a stronger interest in the fate of a child than its medical attendant, and where the latter is uncertain, the former may well be allowed to pause. It is under the impressions of these

feelings on the subject of vaccination, that we hesitate not to recommend the work of Dr Lewins in that sphere of circulation for which it was intended by the author. He has employed most of the arguments that would occur to a person tolerably versed in the subject; and far more than seem simply necessary for convincing any rational person of the indubitable utility of vaccination. Indeed, we could almost wish that influential physicians would, every where in their own circle, either engage their credit in favour of the work of Dr Lewins, or employ their time in presenting what they consider a more perfect "argument" of their own. For, without some such interference, we fear much that a work like the present, neither boasting of novelty, nor external appearance, nor having the "leaguing of the trade," to recommend it, will not travel far from the *arrondissement* in which it has first made its appearance. The following may serve as a specimen of the style of Dr Lewins, which is certainly not in the best taste, but the case is interesting and well attested. On the whole, we part from the author with a favourable impression;—with an impression, indeed, that he might have done more; and, perhaps, executed what he has done better;—but heartily postponing these minor considerations to the great and moral object of his book, and with a grateful sense of the time and personal comfort thus devoted, by an active practitioner, to the advancement of the public weal.

"About two years ago, when smallpox were prevalent at Haddington amongst the vaccinated, they attacked a family in the suburbs, where there were several unvaccinated children. I heard nothing of this family, until all the children, not protected by the agis of Jenner, were covered with smallpox, except an infant about three months old, which was instantly vaccinated. But it was too late: three days after the cowpox matter had been inserted, smallpox made their appearance upon the body of the child, but the pustules were scanty in number, soon suppurated, healed kindly and expeditiously. The primary fever was mild, and there was no secondary fever; and whilst we thus observed, with surprise and satisfaction, the effect and controlling power of vaccination, performed under these unfavourable circumstances, we also witnessed the cowpock on the arm of the vaccinated, in its turn, modified by the presence of the smallpox. The former had, in what I should consider a perfect degree, the appearance which they assume, when the herpetic eruptions, or ulceration, exist upon the body of a patient at the period of vaccination; and I may mention, as a still more extraordinary illustration of the wonderful power of vaccination, practised under the most unfavourable circumstances it is possible to conceive, that Mr Kesson of North Berwick, some time ago vaccinated a babe, the moment it was born, in a small, filthy, and ill ventilated apartment, where smallpox were raging in all their horrors at the time, and where the putrid remains of two children, who had died the same night, were actually lying in an adjacent bed. The infant was affected with

both diseases, but so completely did the vaccine modify and subdue the variolous, that there were not above thirty or forty pustules; and the subsequent history of the little sufferer was so similar to the one mentioned above, that a farther account of it is here unnecessary."—P. 35.

Elements of Physiology. By K. A. Rudolphi, M. D. Professor of Medicine, and Member of the Royal Academy of Sciences, Berlin. Translated from the German by W. D. How, M. D. Vol. I. 8vo. p. 254. London, 1825.

"To compile a Manual of Physiology," says Professor Rudolphi, "appears to me to be one of the most difficult and unthankful offices; and it may easily be conceived how much greater interest must be afforded by any other literary production, in which we can treat in detail the subjects of our own particular choice. In a compendium, it is necessary to mention the most familiar circumstances, as its object is to give a certain view of the whole; and, on the other hand, physiology is a science so very extensive, that it becomes a matter of extreme difficulty, on account of the limited space afforded in such a work, to give a sufficient view of all the circumstances comprehended under its domain; and, lastly, let us choose whatever arrangement we may think proper, we shall never find ourselves satisfied with it."—Preface, p. xxx.

We sympathize, as we participate, in the truth of the author's view of those difficulties which environ the man that would compose a new Manual of Physiology; but Professor Rudolphi is not the only writer who seems to have forgotten, that similar obstacles present themselves to all compilers of scientifick elements, be the subject what it may, arithmetick or agriculture, flute-playing or physiology. Another omission seems also to be made in the calculations of these learned persons, which, to speak truth, we never saw chargeable on their employers, the booksellers, except, perhaps, a few, who thrive by catching the first flood of the Leipsic fairs. They seem to forget, that, to impress the publick with a suspicion of their publication being worth perusal, it is a preliminary, almost indispensable, that they, the authors, should be generally understood to know something of the subject of which they treat. Without this guarantee there can hardly be assumed a presumptive reason, why the compendium collected by A, should be expected to exceed, in any one respect, that which had previously been digested, "from the latest authorities," by his brother bookwright, B; and if they would but turn their eyes backwards to the history of their

science, they would find that the apparent "unthankfulness" of the publick has never been exhibited to him who was at the same time extending the number and distribution of the spreading rivulets of science, whilst he prevented the main stream overflowing its banks, by reducing to a brief and judicious compend, the more imposing parts of it previously known, interspersed with, and adapted to, his own discoveries. We repeat it, an adept in science *must* make discoveries, though of various value, according to the state wherein he happens to find it, and his own perspicacity or good fortune. The publick is not so extravagant as to expect that he shall remodel every article of the science; but it looks for the seal of his opinion with regard to what is to be retained, and what rejected, of the old, and his own exposition of his own discoveries. When these advantages have been wanting, the reputation of mere compilations has been ephemeral indeed; and where they have appeared to be endowed with some unaccountable vitality, as in the case of Richerand's eloquent production, the true cause has always been found in the oscitancy of the booksellers merely neglecting to fill up a blank in speculation, because they knew it not to exist. But men read Haller, Hunter, Blumenbach, or Magendie, not solely to know what others have discovered, though they are fittest for that purpose also, as being the most to be trusted; but to learn the opinion of those distinguished physiologists, as to the possible sources of fallacy in what is admitted as true, and their judgment in these many always curious, though indeterminable, questions of the science, regarding which, the sentiments of ordinary men are known to hang in balance; and, in the second place, to have the pleasure of perusing their original discoveries in the words of their authors. Till, therefore, a person untrained to arms or musick, shall be found to have composed popular compendiums of these arts, or a writer, devoid of opportunity for acquiring medical knowledge, shall be convicted of producing a favourite manual of medical practice, we shall not be surprised at hearing of compilations of physiology, not drawn up by persons of note in that difficult study, falling dead-born, as the phrase is, from the press, to the inexpressible anguish of all concerned. Our wonder must rather be, that their authors should ever look for fame or favour to their labours, to the mere mechanism of perverting the order, or translating the ideas offered to their hands, in the writings of others.

Strictly speaking, however, the work of Professor Rudolphi, which has led to these reflections, does not exactly meet a comparison with the works on Human Physiology. It is properly a brief outline of *Biology*, or what is commonly denominated *General Physiology*; comprehending the similar functions and parts, considered in each chapter, under all their variety through-

out animated nature, in man, quadrupeds, birds, fishes, insects and plants. We had occasion to notice the objections to the skeleton systems of this kind, when speaking of the "Biologie" of Treviranus, in our last Number, and shall not, therefore, repeat them here, but may merely remark, that, as far as the plan seems capable of elegant and judicious condensation, general physiology has had every advantage in the hands of Professor Rudolphi. He divides physiological science in this manner.

General Physiology. — *a.* Anthropology, *b.* Anthropotomy, *c.* Anthropochemy, *d.* Zoonomy.
Special Physiology.—*a.* Sensation, *b.* Motion, *c.* Nutrition, *d.* Generation.

The volume noted, after a short introduction, contains Part I. General Physiology, subdivided into

Book I. *Anthropology.*—Chap. 1. Distinction between Man and Lower Animals. 2. Varieties of Human Race.
Book II. *General Anthropotomy.*—Chap. I. Simple Solid Parts. 2. Compound Parts.
Book III. *General Anthropochemy.*—Chap. 1. Simple Ponderable Substances. 2. General Organic Substances. 3. General Compound Parts. 4. General Chemical Processes. 5. Decomposition in Human Body.
Book IV. *Zoonomy.*—Chap. 1. Phenomena of Life. 2. Source of Life in General. 3. Conditions and Causes of Life. 4. Termination of Life.

The new terms might have been spared, or, perhaps, would have been advantageously turned into English words by the translator. They differ in sound, merely from other denominations in common use. The synopsis we have just given will shew, that the present volume is little more than a sort of "*Anatomie generale,*" precursory to the doctrines of the functions, to be delivered in the succeeding volumes.

We have looked in vain through the present, for a passage, that, whilst it added a unit to the reader's physiological knowledge, might, at the same time, afford him a specimen of the method, both of author and translator. The latter has been criticized by our contemporaries, perhaps more than he ought, but still not without foundation. The reader may take the following, which would not have been without its share of interest, in the days of Pereira and the sect of Preadamites.

"The question, whether a race of men, anterior to those now inhabiting the earth, has been annihilated with those animals of an

earlier creation, which are now extinct, appears to merit a denial. All the petrified or disinhumed human bones which have as yet been found, are of the present construction. Petrifactions of monkeys have never yet been observed; but a creature, something resembling the Bradypoda *(Megatherium)*, appears to be the fossil of the highest mammiferous animal yet discovered.

" *Rem.* 1.—J. J. Dauxion Lavayasse (Voyage aux Isles de Trinidad, de Tobago, &c. Paris, 1813, 8vo. T. i. p. 62.) caused the chalk bank to be dug up, which, at full tide, is covered by the sea, and which, in the year 1804, General Erouf had permitted to be dug at the entreaty of the natural historian Gérard, when a whole skeleton was found petrified. Lavayasse likewise found heads, and other parts, in the same state, and remarks, that all these Anthropolithoi lie in the direction from west to east; he likewise found with them weapons and armour, which the savages still use, and therefore believes that this has formerly been the burial place of these people.

" C. König (on a fossil human skeleton from Gaudaloupe, Philos. Transact. 1814, p. 107,—120, tab. 3.) has described, and given a drawing of a similar petrified skeleton without the head, which had been brought to England. That it is a human skeleton there is no doubt; but as the head is wanting, we can say nothing more particular concerning it, particularly whether they had been Caribs, the form of whose skulls is easily distinguished.

" *Rem.* 2.—The Baron V. Schlotheim has, in a late work (Die Petrefactenkunde auf ihrem jetzigen Standpunkte. Gotha, 1820, 8vo. S. xliii,—lxi.) described the human bones, found in the clefts of gypseous earth at Köstritz, among the remains of elephants, rhinoceroses, &c. which I have also seen (in the harvest of 1820) in his valuable collection of petrifactions; a frontal bone, superior jawbones, with well preserved teeth, parts of the pelvis, of the arm and thigh bones. They are not petrified, and of the usual form. Oken pointed out to me, in Jena, the skeleton of an old Polar inhabitant, which is in his museum; shewed me, on the external trochanter, a strong lateral protuberance, one similar to which, he found in a piece of a thigh bone, sent him by Schottien of Köstritz, so that he considers the fossils of the human bones of Köstritz as the remains of an earlier creation. Schlotheim also considers it very probable that they are the remains of an earlier creation, and supports himself particularly by this circumstance, viz. that human bones are so frequently found with the fossils of animals.

" On the 9th of March 1821, the Baron Von Schlotheim communicated to me the following interesting information: ' I have lately received the bones of another rhinoceros, together with fragments of human bones, which were discovered together in the loam clefts of Köstritz. The rhinoceros's bones consist of the right and left hinder thigh, and numerous fragments of ribs and vertebrae. Among the human bones there is a distinct and pretty long piece of a humerus. As this (*the Friedmannsche*) gyps-cleft is a lately reopened one of the kind, I, on this account, lay more value on the discovery. The small bones of land-animals, and fragments of stags'-antlers, present here in the same way as in the other gypseous clefts."—P. 59.

Anatomie des Systèmes Nerveux des Animaux à Vertebres, appliqué à la Physiologie et à la Zoologie. Par A. Desmoulins, Docteur en Medecine. La Partie Physiologique est faite conjointement avec M. F. Magendie. Paris, 2 vols. 8vo., pp. 1160, with a Quarto Atlas. 1825.

Anatomy of the Nervous System of the Vertebrata, applied to Physiology and Zoology. By A. Desmoulins, M. D. The Physiological part, with the assistance of M. Magendie.

Although the choice sport of hunting down truth in couples, has not yet made much progress among the philosophers of this country, we confess we are not greatly averse to its extension among the cultivators of, at least, natural science. When the king of France goes out on a shooting excursion, the whole Forest of Fountainbleau, we are told, rings with the *tintamarre*; clatter, chatter, horns, bugles, and everlasting pops of small arms into the air, announce the regal enjoyment; and, by being spread over a large tract of surface, they concentrate in their approach the game they encompass, into a very small space: up to which rides the Most Christian Majesty of France, with a few of his chosen courtiers, and enjoys the supreme delight of fusilading the terror struck and unresisting animals, till the spirit of St Louis refuses to animate longer his weary, blistered, and most gracious right fore-finger: when the attendants, on his retiring, advance to complete the carnage, and gather the spoil for his use. Even so fares it with poor Truth among our loquacious neighbours:—" to-day the French, all clinquant, all in gold, like heathen gods,"—first make (the journals of) Europe resound, not with what they have done, but what they are about to do, in search of truth; to-morrow they associate in bands, and beat the bushes about in every direction; one starts her in the south, another in the west; a third hollows out *In view!* and, at last, they bring the poor shy, frightened creature into a corner, without ever a well to conceal her at its bottom, till the master of the hunt comes up, and fairly bags her! A Thenard, a Morveau, a Biot, or a Magendie, thus batten their fame, and keep their gala days; while their humbler, but equally effective associates, are totally forgotten. On the whole, however, science is much a gainer; and, as for the more equable division of the spoil, they have a right to settle that among themselves. We believe the true source of this national peculiarity is referrible to their ardent ambition, as individuals, and their greater sociality as a people; whilst they might,

with equal justice, consider our backwardness in this respect as the fruit of that peculiar sedateness by which the inhabitants of our gloomy island have long been characterized.

The first work before us is of the description which suggested these observations: a conjoint labour of MM. Desmoulins and Magendie. As the latter has inserted the substance of this work under the form of periodical papers, by Desmoulins and himself, in his Journal, and has reduced the same to a more condensed form in the second edition of his Physiology, of which an English translation is just published *, we shall have done our duty to our readers if we acquaint them with the peculiarities of the "vertebrate nervous system," its arrangement, and a few of the numerous discoveries which it contains or lays claim to. We will have occasion again to revert to the work, when speaking of the others which succeed it in series.

M. Desmoulins has divided his work into two volumes, and likewise into as many parts, although these two divisions do not correspond with each other in point of extent. The first part relates merely to the anatomy of the nervous system; the second to the physiology deducible from the same; and the quarto volume of lithographic plates may be considered as common to both.

The first volume consists of three books. The first book of it is merely an introduction to the study of the cerebro-spinal system, and we would recommend its perusal exactly in the place where it now stands; it explains many forms of speech, and peculiar terms which are employed by the author in the course of the work, and which, to an English reader at least, are by no means of obvious signification. Thus we learn, in this book, that, by the *superior* and *inferior nerves* of the spine, M. Desmoulins understands merely the *posterior* and *anterior* respectively; the superior being the nerves which correspond to the dorsal, and the inferior to the facial aspect, in man. It is a piece of nomenclature applicable to fishes and quadrupeds, but which sounds rather harshly when transferred from these to man.

It will not be expected by our readers that we should institute a formal inquiry into the originality of all the views of M. Desmoulins; the more especially as he himself tells us, in his introduction, that they have been characterized, by the illustrious annalist of the Academy of Sciences, as "elicited by the prize offered by that institution in 1821;" and may therefore be considered partly as jejune, or directed to a special purpose; and partly as the constituent members of a system of neurology, towards the composition of which, order and accuracy are quite as much in requisition as the mere amount of novelty that it

* By Dr Milligan, with Notes. Edin. 1826.

may have been the fortune of the author to add to the labours of his predecessors in the same path. The following are the most interesting particulars we observed:—

1. *The transmission of sensation and motion is made by the surface of the spinal marrow, and not by its central parts.*—Vol. ii. p. 552. See the extracts we made from Dr Spurzheim's Anatomy of the Brain, in our last Number, p. 168, and the work itself.

2. *The sources of sensation and motion do not,* as Flourens imagined, *respectively reside in the brain and cerebellum;* it having long since been proved by Le Gallois, that sensation and motion is communicable from any section of the spinal marrow alone, after decapitation.—P. 556.

3. The consciousness of sensation, except sight, resides in that part of the superior cord of the medulla, into which are implanted the roots of the fifth pair.

4. Vomiting, from an emetic, may be repressed by compressing the fourth ventricle, at the origin of the eighth pair.—P. 564.

Volition and consciousness are different phenomena, and reside in different parts of the same brain, and differently in different animals.—P. 566.

5. The seat of motion in reptiles is not in the cerebellum, but in the fourth ventricle.—P. 577. But Flourens mistook the compression of sanguineous clots, which produces apoplexy, and consequently immobility, for the effect of the removal of the lobes.

6. The number and the perfection of the intellectual faculties in the series of species, and in individuals of the same species, are in proportion to the extent of the cerebral substance. But this surface is not expressed by volume, but by the depth and number of the convolutions of the brain.—Pp. 596–606. This was also the opinion of Dr Charleton, and of Haller.—*El. Phys.* iv. pp. 14–402.

7. There is no relation between the quantity of this convolution of the cerebral surface, and the EXTENT OR FIGURE of the cranium or brain-case. Examination instituted upon a living being, independently even of the experience of the faculties, whether with regard to the figure of the cranium, or the difference of its area, compared to the area of the face, can teach nothing of the nature of this convolution, that is, of the proportion of intelligence, which has no other measure than the extent of the folding itself.—P. 608. "It has been shown, Book i., that the exterior projections of crania correspond not to their internal cavities."—P. 609.

8. The specific gravity of the brain, 1031, is constant in all the stages or ages of life, and that of the white and grey matter is always the same. While all the other tissues waste or change

by disease or age, the nervous system remains unchanged. "In states of over excitement, therefore, of the nervous system during convalescence, and in temperaments which we name nervous, the powers of the nervous system are not diminished, as physicians falsely suppose; on the contrary, they predominate with an energy which the other tissues, particularly that of the muscles, no longer balance. In consequence, physicians, with their antispasmodics, their pretended *composing*, *nervine*, &c. medicaments, which are all energetic stimulants, aggravate, without doubt, the evils which they imagine they cure,"—P. 623.

9. The least compression of the cerebral lobes produces coma.—P. 627. Even the clots of blood formed, in the experiments of Flourens, in which he removed the lobes, so far induced this, as to lead him to believe that these were the exclusive seat of volition, intelligence, and sensation.—P. 627.

10. The lobe of the fourth ventricle, where the *consciousness of sensation* resides in the *mammalia;* and also the *will* or faculty of being determined, in reptiles and fishes, enjoying an exquisite *sensibility:* and the cerebral lobes, in which all induction proves, that the faculties of *understanding* and *instinct* reside, being altogether *insensible:* it follows, that to *feel*, and to *think*, are different phenomena, since they depend upon the action of two organs, of which the properties are contrary, the structure different, and the relative distance so great. Every metaphysical system deduced from the unity of these two faculties, must be false in its first principles.

11. *The nerves of sense have the same structure as the nerves of motion;* and the one of these two functions which it performs, depends entirely on the tissue upon which it is distributed. But they have different origins; all the nerves of sense originating from the lobe of the fourth ventricle, and the posterior aspect of the medulla spinalis.—P. 639.

12. *The retina in man is entirely void of sense*, as M. Magendie has ascertained during the depression of cataract.—P. 672.

13. *The motor nerve of the iris is the third pair:* the same nerve supplies the inferior oblique, which turns up the white of the eye; both, *naturally*, involuntary actions. This nerve, and the fourth and sixth, are totally insensible: they exist only in animals which have an optic nerve.

14. A complete division or wound of the crus cerebelli throws the eye of the affected side downwards and forwards; that of the contrary side, upwards and backwards.—P. 699.

15. The fifth pair is an organ necessary to all and each apparatus of sense in the exercise of its functions, but still there are *cases* in which it is only accessary, or even has its place supplied

by another nerve; best proved by dividing the fifth pair within the cranium. It is thus found to be the immediate organ of all the senses except sight: to this it is merely an accessary.—P. 701. The fifth pair, M. Desmoulins tells us, is distributed to the fins and tail of fishes: in some of which, the lamprey, it is found very large. When its trunk is divided, in dogs, cats, rabbits, or guinea-pigs, in which the optic nerve and third pair remain quite entire, there is produced, 1. Blindness; 2. Immobility of the iris, with dilatation in the dog and cat, contraction in the rabbit and guinea-pig; 3. Insensibility of the surface of the eye; 4. Sensation of its secretions; 5. Nictitation; 6. Insusceptibility of inflammation; 7. Ulceration of cornea; 8. Taste and touch are destroyed in the tongue. 9. The *buccinator*, *temporal*, *levator palpebræ* muscles become paralysed.

16. The action of the posterior portion of the fourth ventricle is always in correspondence with that of the eighth pair. Hence this ventricle in asthmatic affections, free of pectoral disease, *may* perhaps exhibit, after death, some trace of alteration. —P. 754.

17. *The respiratory movements* of the animal muscles, constitute that harmonious play of actions which present themselves in vehement respiration.

The physiognomical movements are all such as start forth on any sudden emotion, as terror unexpectedly excited; and we have but to excite or acquire a distinct idea of the action so denominated.

But these systems of motion are *involuntary*, though susceptible of being influenced, or imitated by the will. They are not derived from a particular order of muscles, but from a certain order of nerves; which animate some muscles, which are the common instruments of a very great many *other* motions.

These nerves are,

1. The facial or *portio dura* of the seventh pair.
2. The superior external respiratory nerve, or accessory of Willis.
3. The inferior external respiratory nerve, *or external* phrenic.
4. The internal respiratory, or *internal* phrenic nerve.

That these nerves are the source of the constancy and harmony of the respiratory motions, has been proved, 1, By direct excitement and paralyzation of the nerves themselves: 2, By pathological phenomena: 3, By comparative anatomy.—P. 786.

18. The *posterior* roots of the spinal nerves are much the largest, and destined for sense, paining when irritated,—and are the proper nerves of motion. *In general*, nerves of sense are five or six times the size of nerves of motion. Thus the ex-

citing nerve of all the muscles of the elephant's trunk, is smaller than that which is distributed to the tractile extremity of that organ.—P. 783. In fact, the quantity of nerve diminishes as the bulk of the animal increases; but still farther in a denser medium.

" Il faut ecrire," says M. Desmoulins, " avec sa conscience, en presence de Dieu, dans l'interet de la verité; je l'avais déjà fait dans ce livre !"—Pref. viii. The origin of this extraordinary anxiety to establish his right to the confidence of the reader, seems to be founded in some rather unfair remarks (p. 167. above) from Baron Cuvier, wherein our author's work is charged with being elicited (*provoquée*), by the hope of obtaining the prize offered by the Royal Academy in 1821, for the best essay on the subject,—a charge which we think doubtful of itself, in any case hardly to be proved, and which, in the present, M. Desmoulins has indignantly refuted, in his preface.—P. xx. We know not a greater abuse of power, than the employment of that authority with the public, which merit or intrigue may have acquired, to crush unjustly or thoughtlessly the aspirations of others. Dr Thomson, in his History of the Royal Society, has shown how guilty of this offence was the celebrated Fontenelle,—suppressing truth often merely for the sake of effect, at other times from personal feeling. And we are sorry to find something like this accusation revived against a much more estimable character, in a country where literary or scientific merit rarely fails in its reward. Had it occurred in another, we know too well how the pompous dolts who possess, acquired the confidence they abuse, to have felt for a moment either regret or surprize at its repetition.

Translation of Magendie's Compendium of Physiology. By E. Milligan, M. D. editions 1. and 2. Edinburgh, 1824, 1826.

Edinburgh Review, No. LXXXVIII. 1826.

Letter from George Combe to Francis Jeffrey, Esq. in answer to his Criticism on Phrenology, contained in No. LXXXVIII. of the Edinburgh Review. 8vo. pp. 78. Edinburgh, Anderson *junior*, 1826.

We are not quite so bloody minded, with respect to the phrenologists, as some thoughtless persons might infer from our dislike to their tenets. We pity them. Victims of a hallucination, which, in some shape or other, is inseparable from human

nature; we look on them as genuine objects of compassion, and throw them our halfpenny worth of commiseration, as they obtrude their insane visions upon our notice, with as sincere a christian charity as we would to the ulcered and naked beggar who exposes himself for its elicitation in the streets. They are truly to be pitied; and, were we to conceive a situation in which mental misery had reached its climax, we should say there it was, where faith and prepossession inculcated a belief, which was known to the holder to be a proper object of ridicule! He knows that his fondest and purest associations are universally laughed at; that he himself *would* laugh at them were he not what he is; and that it is alone his being what he is that restrains his mirth. Nay, what is worse than all, his own conscience acknowledges that his tenets are genuine subjects of ridicule: and though he may console himself with the doctrine, that "ridicule is not the test of truth;" yet he knows and feels, that truths which are once shewn to be obnoxious to ridicule, are, at least, legitimate subjects of suspicion.

We contend, moreover, that the authors who often, with the best intentions, have set about recovering the subjects of this singular delirium, have not gone to work in the way most likely to promise success. They have set out with the notion, which is true only in the abstract sense, that the phrenologists are a *sect*, "*jurati in verba magistri*," zealous, united, and numerous. Nothing can be more incorrect than this idea. Out of Edinburgh, they would not amount to 500 in the whole British empire; and of these, perhaps, not fifty are sincere believers. As to Edinburgh, there may indeed be a larger muster there:—perhaps twenty medical men of all grades, and three or four times as many lawyers, who, it is said, would professionally maintain, in phalanx firm, every day of their lives, for the regular fee, that 3 and 2 make 7, nay seven times seven,—were it the will of their employer. Some of these are perfectly sincere, we doubt not; and a few respectable trades-people may also be true believers. But we deny this doctrine of their Sectarianism, and believe authors have been led into it by a miserable production, which has pushed itself forward as the organ of the phrenological philosophy, without any adequate pretensions. This journal is confined to Edinburgh; and if, at the risk of their characters, a few of the leading phrenologists now and then condescend to scribble their spite in it against their opponents, it is most unfair to consider it as the mouthpiece of the doctrine.

In the second place, laughter, ridicule, and ludicrous images, have been the arguments resorted to by these pretended friends of the phrenologists. It is quite true, that, of all the theories ever propounded, none ever afforded so rich a supply of pleasantry as the doctrine of phrenology. When first promulgated here, it prolonged the good humour of our dreary winter evenings

for five years in succession; and there seemed to be no end to the good things, the capital jokes, (practical and theoretical), the repartees, and *double entendres*, to which it gave origin. Cicero says, that, when one soothsayer met another, "he always wondered why they did not laugh outright:"—and where the simple ideas, of which any given compound is constituted, are essentially and primarily ridiculous, the person who engages in their analysis must have very strong reasons for preserving his gravity, if he can persevere to the end, without indulging the risible propensities proper to his nature. A baked pie, which should be found to consist merely of noses, or tails, or fiddlestrings, or puppets, would be sure to create laughter in every person not forewarned against the event of its dissection. Thus, also, the reference of a complicated train of moral reasonings, of which the result was long doubtful to the person reasoning, and all around him, to the agency of a round bump of the skull, or of the brain beneath it, in a locality assigned by a specific artist, is so contrary to the general apprehensions and observation of mankind, that the *ridicule of contrast* might naturally throw him to whom it was proposed into loud bursts of laughter; but persons who write and argue, ought to remember, that peals of this description merely prove one fact, that the thing is ludicrous,—but they prove no more.

In the *third* place, the *argumentum ad hominem* has been too much resorted to by those who have undertaken to convert phrenologists. It is true, that few persons of eminence are counted in the ranks of phrenology, and that it has been 33 years before the public without the addition of many recruits to its ranks; but little is to be deduced from this. A sufficient number of rational beings have professed themselves phrenologists, to convince us that it contains nothing revolting to the *ordinary* exercise of reason: and the true cause why the more intelligent have kept back, seems to be the inherent ridiculousness of the doctrines themselves; at least we never knew any other doctrine which had so many *proselytes of the gate*,—we mean nominal professors of the faith, ready to enter in, or hurry out, according as the stream of popular opinion may ebb or flow. After all, the argument from individual character proves nothing, and does nothing, but irritate the erring subjects it is meant to cure.

In the *fourth* place, the phrenologists, especially the Edinburgh phrenologists, have been endlessly badgered about the anatomy, and physiology, and we know not what all, of the brain, and spinal marrow, and nerves, as if any thing of that sort could cure them. The truth is, the men do not admit any such elements into their hypothesis. They rest on the broad fact, THAT A DEVELOPEMENT (OR ENLARGEMENT) OF THE

BRAIN MAY ALWAYS BE DETECTED IN A CERTAIN REGION OF THAT BRAIN, WHEN A CERTAIN CORRESPONDING FACULTY, SENTIMENT, OR PROPENSITY IS PRESENT; and that, *vice versa*, WHEN A GIVEN FACULTY, SENTIMENT, OR PROPENSITY IS FOUND TO BE PRESENT, WE SHALL TO A CERTAINTY DISCOVER, IN A KNOWN REGION OF THE BRAIN, A DEVELOPEMENT OF THAT PART OF IT, OR ORGAN, WHICH IS KNOWN TO BE THE INSTRUMENT OF THE GIVEN MENTAL BIAS. We will afterwards have occasion to consider this fundamental aphorism of the science of phrenology, which is indeed the only part of it worth considering; but it must be superlatively clear, that to men holding this doctrine, minute strictures on the internal arrangement, functions, and sympathies of the brain and nervous mass, are utterly inapplicable. We do not mean to deny, that, in this respect, the Edinburgh phrenologists have somewhat shifted their ground, but this is their present position; and we scruple not to say, that it is impregnable to the small arms of anatomy, zoology and physiology.

In the *fifth* place, to men founding, in this way, on a broad fact of mere observation, all the pyrotechny and mental legerdemain of what is *abusivè* (as *lucus a non lucendo*) denominated metaphysical science, must be totally thrown away. The experience of thrice a thousand years has demonstrated, that any one metaphysical system is just as good as another, the last always the best, *and the next to be overthrown*; and having this presentiment in our minds with regard to the *present*, or prevailing system of the day, can we have any confidence in its conclusions against a science, founded on principles much more tangible than its own? The readers of Hume's Essays need not be reminded of the attempt of that very acute person, to overthrow some of the most obvious principles of GEOMETRY, because inconsistent with the doctrines of his favourite science. In short, metaphysicians should recollect, that the faculties, powers and actions of which *they* speak, are mere mental abstractions, which may be made to comprehend more or fewer individual things in their definition, almost at the will of the speaker; and cannot, therefore, ever afford any correct limits, or incontrovertible data, by which the corresponding notions of the phrenologist can be compared or verified. Phrenology, in fact, is only a more easily verifiable system of metaphysics; but we must frequently recur, to use a mathematical phrase, to *the base of its triangulation*, TO THE CORRESPONDENCE BETWEEN BUMPS AND FACULTIES, in order to preserve this superiority. If the phrenologists adhere faithfully to this view of the subject, there can be no doubt of the truth of their assertion, that the only true metaphysics are to be drawn from phrenology; provided always, that the foundation of that phrenology be true. From this brief sketch, then, it will appear, that, if we grant them this fundamental principle,

all the other objections fall to the ground. The wits and blue-stockings may turn up their noses at the barbarous terms and indelicate ideas of the science. The zealous may oppose banded influence to party spirit, intrigue or imposture. Mr Jeffrey may be as droll as he pleases upon the patriarchal authority of the Reverend Mr David Welsh, minister of Crossmichael; he may bring forth a formidable array of wit, metaphysics, and physiology, (for in all these he is formidable), to the terror and discomfiture of all the advocates' clerks, and junior advocates who need no clerks; he may buzz his startling conclusions and inuendos against the true faith of the heroes of the science, from one end of the *Parliament* House to the other,—all this will avail him nothing. So long as the solution of the grand problem is admitted, "*dato tubere invenire facultatem*,"—so long as it is asserted, and not refuted, THAT CEREBRAL DEVELOPEMENT IS FOUND BY EXPERIENCE TO CORRESPOND TO MENTAL PROPENSITY, the doctrines of phrenology will remain unshaken, and its defenders will only gain fresh courage and reputation from every attack.

We proceed to demonstrate, however, that this cardinal principle of modern phrenology is itself entirely devoid of foundation. In doing this, it is our wish to steer clear of all theory, and of every ambiguous expression; for which purpose it will be best to deliver previously the few steps by which we arrive at this truth, and then enter at some length into the illustration of each singly. The doctrine indeed is none of ours. It was advanced by Dr Milligan, in the notes to his first edition of Magendie, in 1823, and he has repeated it, with illustrations, in the second edition, published in 1826; as also, in a "Proof-sheet," circulated among his friends, though never published. We maintain,

1. That protuberances of the cranium, and large developement of brain in particular positions, are exceedingly common conditions of the human head; so that it is rare to meet, in museums or elsewhere, skulls that are free from such prominences, or signs, as they are called, in phrenology.

2. Most of the *faculties*, *sentiments* or *propensities*, into which the operations of the human mind are divided by modern phrenologists, are common and natural attributes of every man; so that it is an exceedingly rare occurrence to meet with an individual in whom any of them are wanting.

3. About nine-tenths of the *faculties*, *sentiments* and *propensities* ascribed to the mind by phrenology, are of a creditable kind, such as no man is ashamed of acknowledging, but which he feels himself disparaged by wanting.

4. That in attempting to ascertain, by inquiry, the presence of such faculties, &c. with their indications, we must expect to

meet with the same difficulties in verifying the existence of the faculty indicated, as we would meet in endeavouring to obtain a true character of the individuals in any other way; in short, that interest, vanity, shame or error, will often vitiate our information.

5. That it is a familiar principle of human nature to observe *coincidences*, (or *facts happening together*, without any previous relation between their causes,) and to dwell with more delight upon these, in proportion as they are least to be expected to recur.

6. That this attention to coincidences originates in the *surprise* they produce.

7. That the pleasure felt in noting their recurrence, originates in the sense of knowledge, and consequently of power, which we perceive in being able to predict them.

8. This pleasure totally vanishes when the coincidence becomes universally known, no man piquing himself upon predicting the equinoctial gales, or the hail showers of spring.

9. The *failures* of these coincidences are little attended to; because the failure, or non-concurrence of the two incidents which form the compound event, is the common, natural and ordinary course of things; and it is the very essence of surprise, and the pleasure which follows it, to be excited by uncommon events or incidents only.

10. Events, or the absence of events, that do not interest, are soon forgotten: and thus, during all the long period, and the thousands of errors, that were every day committed during the belief in astrology, and the casting of horoscopes, the whole human race attended only to the few coincidences of that fallacious science. Thus, also, the prize tickets in the lottery, though bearing so insignificant a proportion to the blanks, are always found sufficient to keep alive delusive hope in a whole nation. The failures have not this effect, because they are common.

11. From the first and second propositions it follows:

1*st*, That, if any person becomes eminent for any one or more of the faculties, we shall have the chances in our favour of finding the corresponding developement.

2*dly*, That, if we find the developement in any person, the chance is in our favour of finding him possessed of the corresponding quality.

12. Great *faculties* are very uncommon things.

13. Cerebral developements are very common things.

14. Nearly all these faculties which are known to distinguish the character of the individual, are, according to phrenology, those situate in the forepart of the head, where the cerebral or cranial developements are very common.

15. The number of times in which the experimentalist will find the eminence and the faculty to correspond, will be to the

number of times he finds their correspondence fail, in a relation which could easily be calculated, if the number of eminences were always the same. For 33, the number of the faculties, is given.

16. If there was always only one eminence present, as that of caution, then the phrenologist *might* make thirty-two mistakes before he inferred the right faculty that belonged to the eminence; but he could make no more, as he would never guess the same faculty twice over, and there are only thirty-two which he could guess, besides the right one.

17. Supposing still that there was but one eminence on the given cranium, and that the phrenologist had to infer, from a knowledge of the faculties, the eminence existing on the cranium. He might here commit himself, IN ANY ONE SINGLE GIVEN CASE, by wrongly inferring the presence of the sign of that faculty he had observed in the individual; but, as the eminences are exceedingly common things, like the faculties they represent, a highly developed faculty has a chance of being accompanied by an indication, which chance is greater in proportion to the frequency of the eminence, and may be expressed by a fraction, of which the *numerator* is the number of times in a fixed number of skulls that the organ is present, and the *denominator*, another number expressing the number of times it is wanting. Thus, if the sign of music be present in three men out of four, the chance in favour of a conjecture made, that the possessor of a high musical faculty possesses also the sign of it, becomes as three to one, and may be expressed thus $\frac{3}{1}$.

17. The chances in favour of a developement being found with a high exaltation of faculty, are not fewer than they would have been with a moderate faculty, but the same in number; for both depend on the relative frequency of the eminence to which it is assigned.

18. Hence the wonder *ought* not to be greater when the developement is found combined with high, than when it occurs combined with moderate faculty.

19. The cause of wonder will, however, be greater, if the developement is found to bear due proportion, in volume, to the evolution of the faculty.

20. The measure of this chance will be a vulgar fraction compounded of that above, 17., and the fraction expressing the relative frequency of *large developement*, of that eminence.

21. This would allow but a very small increase of unfavourable chances in the organs of *number*, *music*, and *locality*, which vary much in different individuals, but are generally present.

22. If we now suppose that the human cranium has generally more than one eminence; and, according to our own observation, it has scarcely ever fewer than seven, and most frequently three times seven, the chances of the faculty being found corresponding to the eminence in a given case, must increase in the

same proportion. If the bumps were always all present, we could as certainly predict that the bump would be found along with a given faculty, or the faculty along with the bump, as that fingers would be found conjoined with thumbs, or eyes with noses, in the same individuals. It is the OCCASIONAL ABSENCE of these bumps that excites surprize when the phrenologist happens to be right; and it is the beholder's ignorance of their being so seldom absent, that causes him to feel this surprize.—See Nos. 5, 6, 7, 8, 9. *

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* "To put these chances into a simple arithmetical form, it must be observed that there are *two* cases of phrenological divination.

a. The artist, after ascertaining the BUMP, predicts the FACULTY.
b. The artist, after ascertaining the FACULTY, fortels the BUMP.

a. It is rare for any of the faculties to be wanting; say w times in h, therefore $h—w$ = number of times, the artist will be right in assigning a faculty to the given bump.

Suppose now a person about to form a system of phrenology.

When there are given a plurality of bumps, the chances will be for *each* being referred to a *faculty* not wanting in the individual, $\frac{h—w}{w}$: and, as the success of any one of the given plurality n will be sufficient to establish the credit of the diviner, the chance becomes multiplied by half that number, or $\frac{n}{2} \times \frac{h—w}{w}$ = chance of succeeding with *some one* of the thirty-three faculties.

N. B. *This first form, or the divination from the bump to the faculty, is by far the most frequent in use.*

b. In the divination from faculties to bumps, assume that the whole thirty-three bumps are not wanting oftener than w in h times. Indeed a cranium without a prominence, or some one predominating dimension, has never yet been discovered. Then the number of persons, with at least one bump, is $h—w$, and $\frac{h—w}{33}$ is the chance that any person has the *given bump:* of course, the person who possesses the *given faculty*, has not a *less chance* of having the corresponding bump, than any other individual; so that $\frac{h—w}{33}$ is the expression of the chance in favour of his having a bump respondent to his faculty.

Thus, for example, in the first case, putting $h = 100$, and $w = 1$, which may be considered a very favourable allowance to the phrenologist, and much within the rarity of persons who totally want any faculty, as the musical ear, numbering, colouring, language, &c. We have $\frac{100—1}{1} = 99$ chances to one, that PETER, who has the organ prominent, confesses to being cautious, or is accused of it by others.

And, to employ the same numbers, though even more favourable to the phrenologist than the former, in the second case, $\frac{h—w}{33} = \frac{100—1}{33} = \frac{3}{1}$ that PAUL, who is known to be pious, has the organ of veneration.

In the same manner, if there be supposed (x) 2100 eminent persons in Britain, the proportion of failures, by the first method, would come out to be, $\frac{x—w}{w} = \frac{2079}{21} = 99$, by the first method, and $\frac{x—w}{33} = \frac{2100—21}{33} = 63$, by the second. The remainder, or successful cases, will, in either way, far more than cover those examples of harmony between prominences and faculties published by the phrenologists, even though a much smaller ratio of w to h were assumed."—*Magendie's Physiol. Transl. p.* 549, *Notes.*

23. The chances in favour of the attempts of phrenologists, are thus much more numerous than might be supposed even from their own exaggerated ideas of success.

24. If this doctrine be true, failures in their attempts ought to be as rare as they would be in a similar conjecture regarding faculties of which the organs are KNOWN; such as those of sight, hearing, smell, touch, and taste. Yet they are infinitely more frequent in the former, than they would be in the latter, case.

25. Hence it follows, that the cases wherein the phrenologist does succeed, or foretells the coexistence of the faculty and its sign in the same person, ARE THE RESULT OF CHANCE MERELY. For, if the coincidence of these two states of the individual (we mean the presence of the developement of the cranium, and the faculty ascribed to that developement, as its function,) were the effect of two series of causes constantly co-operating, or of one another; then, with the exception of casualties, just specified, No. 24, they ought mutually to be the indices of each other. But we have already seen, that the frequency of this indication agrees perfectly with the laws of chance; but is utterly irreconcileable with the relations of organ and function known to predominate in the animal economy. Chance, then, and not the relation of organ and function, is the true foundation of phrenological success.

26. This hallucination arises, as we have seen, No. 5, 6, 7, 8, from our being unable, in our minds, readily to overcome the difficulty which occurs in computing the chances; and is at bottom of a simply numerical character. It differs not from the error upon which the doctrine of signatures * has been built in all ages, and in all nations. The predictions of astrology are as ancient as the Babylonian empire. The employment of medicines from their *name* or *external appearance*, the great science of physiognomy, which inferred men's minds and fortunes, from every the least variety in their corporeal appearance and condition,

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* "The doctrine of signatures, like alchymy and astrology, was very prevalent during the fifteenth and sixteenth centuries, and was considered as one of the occult sciences, which conferred no small degree of honour on their respective professors. Some of these philosophers, as they thought fit to style themselves, maintained that plants, minerals, and animals, but particularly plants, had signatures impressed on' them by the hand of nature, indicating to the adept the *therapeutic* uses to which they might be applied. Others, such as the mystic theosophists and chemists of that day, proceeded much further in absurdity, maintaining that every substance in nature had either *external* signatures immediately discernible, or *internal* signatures, which, when brought into view by fire or menstrua, denoted its connection with some sidereal or celestial archetype. Of the doctrine of signatures, as it relates merely to the therapeutic uses of plants and minerals, traces are to be found in the works of some of the greatest authors of antiquity; but the celestial signatures, we believe, were discovered only by the moonlight of monkish ages."—*Encyclopædia Britannica*, p. 354.

and of which phrenology is a mere fragment; the belief in palmistry, soothsaying, magic, witchcraft, rainmaking, and, in one word, the confidence of mankind in every kind of superstition, has arisen from this one circumstance,—their general inability to compute the number of times by which pure chance would allow the pretender to any one of these arts to succeed, in a given number of trials. Ask that "foolish fat scullion, who scours the fish kettle on her knees," why she again consults the fortune-teller, that has deceived her so often? and she will infallibly answer you, "Because I know there is *something* in what she says; she has often told me things that could not be known to her in any other way." The simple girl pays little heed to the failures, —she has been surprized,—and surprize is the parent of wonder, —wonder of belief:—and she returns with a fresh bribe to her deluder, to be the victim of a fresh imposition.

27. That this non-coincidence of the faculty and its sign, are more frequent than the connection of causality could ever be supposed to admit of, is proved by the contradictions constantly occurring in the attempts made by the phrenologists, (however prudently they may avoid making them in general), to pronounce the whole character of the individual from a survey of his *entire* cranial eminences. Thus, Mr George Combe, who is a downright Paul Jones in this department, and who fights his *bon homme Richard*, (we do not mean, of course, his Richard ———,) when almost sinking, with the most reckless desperation;—even he has given the sanction of his name to a striking illustration of this fact. In 1821, a thief of the name of Haggart was executed in Edinburgh, for murder, and, for the purpose of obtaining drink-money, in the forty days which, by the law of Scotland, must intervene between sentence and execution, he employed the rather unusual expedient of publishing a tissue of falsehoods, which he called "his life," upon whity-brown octavo, with a copper cut, exhibiting his "interesting" figure under irons, in his cell. A lawyer was as easily found to dress up his case after as before condemnation, and, to complete the exhibition, Mr Combe was prevailed upon to examine his head. Mr Combe accused the scoundrel to his face of BENEVOLENCE and JUSTICE; and in a *confidential* communication, printed at the end of "the life," p. 159., with a much greater shew of probability, we confess, he charges him with GREAT SELF ESTEEM, a LARGE COMBATIVENESS, PRODIGIOUS FIRMNESS, a GREAT SECRETIVENESS, and a DEFECTIVE LOVE OF APPROBATION. "No others of the faculties appear to possess an undue degree of energy or deficiency,"—p. 160. We are at a loss to see what there is in these indications, contrary to Haggart's established character of a notorious pickpocket and burglar, dextrous in breaking out of jails, resisting desperately when assailed, and

so regardless of fame as to make that town in which his father and brothers lived, the constant theatre of his depredations. It is possible, however, that Mr Combe may allude to the indications of BENEVOLENCE and JUSTICE. Impostor, however, and rogue as this man was, he refuses to plead guilty to the charge of cunning, which Mr Combe had inferred from the size of his organ of SECRETIVENESS,—p. 16. He disowns also the motives ascribed to him by Mr Combe, deduced probably from the same principle,—and denies that the mere pleasure of having succeeded in his thefts and frauds, had any share in determining his actions,—p. 165. He thinks the love of dress and company was his chief motive. We have seen that the amative bump was not remarkable, and on the faith of its ordinary size, Mr Combe ventured to predict but a moderate degree of the sexual passion; but to this the criminal says, "You have mistaken me in this point of the sexual passion, for it was my greatest failing."—In correction of another conjecture, he adds,—"A little drink was *always necessary.*"—P. 167–8, of *The life of D. Haggart.*

The above incongruities are neither more nor less than what we would have expected, and if the thing could have been done right, we have no doubt that Mr Combe is the very man that could and would have done it right. The pamphlet we have taken for our text affords abundant evidence of his polemical powers; and if the mere shewing that the Edinburgh Review is wrong could make his cause right, we should not hesitate to say that he has the best of it. But phrenology stands not firmer on its base, because Mr Jeffrey, *Isaeo torrentior*, has mistaken the ground from which he should attack it. He and others have indeed erred grievously in this respect, by mistaking a simple matter of fact question for a complex theoretical controversy. Still it must be remembered, in their behalf, that truth is one,—and that if phrenology, or any other science, announces propositions inconsistent with our previous knowledge, it behoves us to examine the foundations of the new belief, and to compare, fact for fact, those principles of it on which the suspected doctrine rests, with the other facts on which the contrary proposition is founded. When Copernicus asserted that the globe spins round like a top, every twenty hours, on its axis, he propounded a ridiculous idea, at which it was natural and right for his contemporaries to smile,—they were right in comparing his arguments with the foundations of their previous belief, and would have done right to reject the former, had they turned out the weaker of the two; but as they did not, they have also done right in rejecting the other and weaker evidence, which was in fact more apparent than real. The reverse we have shewn to be the fate of phrenology. We have searched out its foundations, and found that it rests on what may be called the quicksand of false

arithmetick,—an endless source of delusion to the human race, wherever *quantity* or *frequency* are concerned *. We feel for those of its professors who have been led away by a source of error which has in all ages ensnared mankind; and if there be any of them, who, for the base "lucre of gain," as honest Lieutenant Bowling hath it;—or, from the desire of personal aggrandizement, have knowingly fought the battles of frenzied zealotry, or wilfully added the weight of character and talent to what they believed in their hearts to be absurdity and impos-

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* The following extract from another part of the work referred to in our former note, and from which, indeed, the present argument is substantially derived, will sufficiently demonstrate that other phrenologists than those of Edinburgh are misled by this illusion, and do not even confine their manifestations of its influence to subjects merely phrenological. That "mentis gratissimus error,"—that *memory of success, oblivion of failure*, which we have shewn to be the true basis of all the pseudo-sciences, has full scope wherever quantity, number, or frequency are chiefly concerned, but imperfectly appreciated. The passage we copy from Dr Milligan's Notes to his translation of Magendie's Physiology,—p. 579.

"Respecting this period (of the catamenia), a curious observation has been advanced by Gall, the craniologist, in the third of his quartos. He affirms, that in all countries there is generally a great majority of women menstruating at the same period: and that there are times of the month in which there are almost none to be found in that condition; nay, that all women are, in this respect, divided into two series: one of which have their period upon the first eight days of the month; and the other upon some one of the last fifteen days. "I kept a journal, in which I marked the periods of a considerable number of females during several years. The result was, that females are divided into two great classes. Each of these great classes has a different period of menstruation. The females of the same class all undergo this natural process within a space of eight days: These eight days being passed, a period of ten or twelve days follows, in which scarcely any menstruating females are met with. After these ten days, the epoch assigned to the second great class commences, all the individuals of which will have completed their menstruations, in like manner, within the space of eight days. Let us suppose that a female of this class begins to menstruate upon the 1st of the month, she will have finished upon the 8th, provided her period is not more than eight days. Another, whose period only lasts three days, will have finished on the third; or in case that she has only commenced upon the 5th of the month, she will also have finished upon the 8th, and so on of the others: so that women, provided they are in a regular state of health, have twenty-one or twenty-six days of interval. For example, the following are the periods which really took place in two females, each of which belonged to a different class, 1818, January 19th, 3d; February 16th, 1st, 29th; March 14th, 28th; April 10th and 25th; May 8th, 23d; June 5th, 30th, 19th; July 26th, 17th; August 21st, 17th; September 18th, 9th; October 16th, 8th; November 14th, 5th; December 12th, 2d. We see that each of them has menstruated thirteen times, and that she who commenced upon the 3d of January, will menstruate for the fourteenth time upon the last of December.

"Mothers, daughters, and sisters, fair and dark, delicate and robust, belong, without distinction, to this or that class of the grand division. Consequently, the cause of the epoch of menstruation does not exist in the individual, but is universal."—*Gall, Physiologie du Cerveau*, iii. 350. See also *Adelon*, iv. 60. But may not this be a coincidence of the same explicable nature as Dr Gall's other ingenious *observations*?"

ture,—we pity these still more! "Quid!—Zopyrus Physiognomon, qui se profitebatur hominum mores, naturasque ex corpore, oculis, vultu, FRONTE, pernoscere. Stupidum esse Socratem dixit, et bardum, quod jugula concava non haberet!"—*Cic. de Fato*, cap. v.

(To be continued in our next).

Physiologie des Temperamens ou Constitutions; Nouvelle doctrine applicable à la Medecine Pratique, à l'Hygiene, à l'Histoire Naturelle et à la Philosophie; précedée d'un examen des diverses theories des temperamens. Par F. THOMAS, (de Trois Vevres) D. M. R., Medecin attaché à l'Hôpital Beaujon, Membre de Plusieurs Societés Savantes. 8vo. Pp. 248. Paris, Bailliere, 1826.

Physiology of the Temperaments. By F. THOMAS (of Trois Vevres), M. D. Pp. 248. Paris, Bailliere, 1826.

WE regret extremely that we have not space left for us to enter, at present, more fully into the merits of this very clever and highly interesting work. We can hardly account for the fleering tone in which it has been noticed in some of the French journals, on any other principle than that fearless indifference with which the author has brought out his own doctrines, and rejected those of his predecessors on the same subject. He has been denominated a sort of phrenologist, but two doctrines cannot easily be conceived more different; and this pseudo-science he renounces, in express language, at p. 92. "It is impossible, by any method of examination, to demonstrate the existence of all the particular and distinct organs admitted by that physiologist," (viz. by Gall). He might more properly be accused of being a physiognomist; but some parts of physiognomy are universally confessed to be true; and every physician engaged in the object of his study, the temperaments, must plead guilty to the same charge.

To be brief, Dr Thomas denies the existence of the common Hippocratic temperaments referred to the humours. He rejects all others which have been substituted for them. He maintains,

1. That the splanchnic organs always modify and regulate the condition of the other parts.

2. That the *magnitude* of the splanchnic organs may be taken as a measure of the influence of these viscera upon the general system, or parts of the system.

3. That the *functions* of that viscus (or those viscera) will be the most energetic which predominates in the system.

4. THE TEMPERAMENTS ARE MERELY VARIETIES IN MAN AND OTHER ANIMALS, WHICH RESULT FROM DIFFERENT PROPORTIONS OF THE THREE GREAT SPLANCHNIC CAVITIES, (*head, chest, abdomen.*

5. The temperaments distinguishable in man are seven: 1. The *mixed*, in which the splanchnic cavities preserve a due proportion to each other; the 2, 3, and 4, are the *cranial*, *thoracic*, *abdominal*, according to the cavity which predominates; the 5, 6, 7, result from the binary combination of the three last; 5, *cranio-thoracic*; 6. *cranio-abdominal*; 7, *thoraco-abdominal.*

6. The *mixed* temperament is the Apollo Belvidere, the *mens sana in corpore sano! Habitat*, France.

7. The *cranial* temperament has mental energy,—ambition—profound emotions. *Habitat*, free countries, England, France, Spain.

8. The *thoracic* temperament,—the Hercules Farnese,—better soldier than captain. *Habitat*, Germany, Poland.

9. The *abdominal* temperament,—paucity of faculties, passions and physical force. *Habitat*, Germany, Holland, England; but in the latter generally combined with the cranial developement.

10. The *cranio-thoracic* temperament renders man the lord of the creation,—prevails from the twentieth to the fortieth year,—is the temperament of great surgeons, conquerors, usurpers.

11. The *cranio-abdominal* temperament belongs to women and infancy. Addicted to love, physical and moral,—are the soul of amusements.

12. The *thoraco-abdominal* temperament.—The subjects of it robust and quiet, easily supporting physical labour and despotism,—happy in not feeling all the weight of their chains. *Habitat*, Asia and Africa. Idiotical when highly developed.

13. These temperaments change in different ages, and obtain also in animals.

14. They explain, by their combination, the phenomena ascribed to the humoral temperaments; and they promise to assist us considerably in the treatment and prevention of disease, in the amelioration and education of human character.

From this very meagre outline of the able work before us, our readers will be able to guess at the important nature of its contents; and we hesitate not to prophesy, that, in a short time, no man will be thought to care any thing for the advancement of medical science, or the natural history of the human race, who has not read the work of Dr Thomas de Trois Vevres. We by no means go the lengths so romantically proceeded to by the author; but we say he is often right, his views ingenious, and that he has opened up a new path in the philosophy of temperament.

PART III.

MEDICAL INTELLIGENCE, FOREIGN AND DOMESTIC.

I. PRACTICE OF MEDICINE.

Case of Hydrocephalus, with Arachnoid Tumour. By Ebenezer Gairdner, M. D. Fellow of the Royal College of Physicians, Physician to the Royal Public Dispensary, &c.; and Robert Allan, Esq. F. R. S. E., Surgeon to the Royal Infirmary, and Lecturer on Surgery, &c. Edinburgh.

Margaret Miller, aged nine months, of a delicate constitution, but lively, having dark eyes, of a peculiarly fine lustre, was, in June 1824, affected with fits of coughing, attended with some fever. As the hooping cough then prevailed in the neighbourhood, that was considered to be her complaint; but after having seen the child at different times during the summer, I had reason to suspect an organic affection of the lungs. The usual remedies were applied, with a change of air; which improved the general health, and she passed the following winter pretty tolerably, though little or no visible change was made on the pectoral disorder.

As the spring advanced, the cough remained nearly stationary; but there supervened an affection of the head, with a purulent discharge from the ears; much peevishness and loathing of food. On the 6th April, there was great heat of head, with general excitement and distress; the bowels were slow, and there was occasional vomiting. Small doses of calomel, with chalk, by the mouth, also injections of castor and turpentine oils, were frequently repeated, which, with difficulty, brought off much dark-green and slimy feces. The parents objected to leeches and blisters; but consented to the application of the antimonial ointment to the vertex of the head, as they had seen its beneficial effects on some of the children in the neighbourhood, who were affected with hooping cough.

The pustular eruption thus induced, seemed to operate very favourably for a short time; though a puffiness, or rather edema, of the forehead, had appeared for a day or so. On the 16th and 18th, the edema had gone off, and the wonted lustre of the eyes was considerably restored, the febrile excitement lessened, and the discharge from the ears had ceased: and though the child seemed to rally considerably for ten or twelve days, yet the stomach continued irritable, the bowels obstinate, their secretions of the same peculiar morbid character as above remarked, and the belly full and tense.

Towards the 23d, the discharge of pus from the ulcer of the head became rather profuse; and, on the 5th of May, notwithstanding the steady use of astringent and antiseptic applications, some fetor was sensibly emitted from the eschar. On the 15th, the mother reported that a considerable quantity of water escaped from the sore during the preceding night. Indeed, from this period, there was almost a constant oozing, and occasional dropping of

limpid fluid; nay, on more than one occasion, this was discharged in a much greater profusion, with the exception of the intermission, which shall be mentioned shortly.

The eschar had been, from time to time, cut and removed as far as possible. As the whole seemed loose on the 24th, I gently lifted it up; upon which it was found to comprehend not only the integuments, but also the corresponding portion of the dura mater, for the anterior bregma had never been completely ossified; a quantity of water escaping at the same time. Thus, an opening into the cranium was made of about an inch in diameter; the edges of the frontal and parietal bones were exposed, besides the cavity of the skull, which was quite full of the limpid fluid, supported by the brain with its coverings; the hemispheres performing their regular motions, though apparently somewhat apart, and, as it were, almost exposing to view the corpus callosum. No blood whatever escaped, and the child seemed but little, or not at all, affected; indeed, for four weeks past, the cough and breathing were easier, and for the last nine days, since the water had begun to flow, she had become somewhat more lively. A simple dressing, with a moderately tight bandage, was applied.

During the following night, there was a considerable further discharge of fluid from the head, slightly tinged with blood; yet the child suffered no particular collapse, and pus, of a pretty healthy appearance, with granulations, appeared round the wound. With more relish, she took, from time to time, a little food, consisting chiefly of beef-tea; the bowels were more readily moved, and the alvine discharges somewhat more natural.

Much water continued to come daily from the opening, especially during the night, when she lay in her cradle; and so profuse was this, at times, as to penetrate the bed below, after drenching the pillow immediately under her head, until the 6th and 8th of June, when it abated and ceased entirely. But, about the same time, she was assailed with a fresh attack of fever, and on the 9th, the arachnoid membrane, apparently somewhat thickened, and considerably reddened, was, in the course of about twenty-four hours, thrust up through the opening of the head, about two inches perpendicular from the vertex, presenting a conical tumour, the base of which forced upwards, at each side, a portion of each of the parietal bones; the tumour was firm and tense, but indicating contained fluid, none of which had been observed to have escaped for the preceding forty or fifty hours. In the evening, I sent a note to my friend Mr Allan, requesting his advice and assistance, who was so good as to accompany me the following morning.

On the 10th, we found that there had been, during the night, a renewal of some little discharge from the head; the tumour, though less tense, was still about the same size; and dreading its bursting by an extensive laceration, Mr Allan proposed to puncture with the couching needle, by which a moderate and regular discharge of the water might be effected. It had already been remarked, that the child got relief when the fluid escaped, but suffered materially on its being restrained; and as the risk of a collapse would have been much greater, if the fluid had been evacuated by a large instead of a small opening, we were inclined to adopt this operation. However, we availed ourselves of the opinion and advice of Mr Russell, who was so obliging as to attend us, and who agreed to the proposition as the most eligible. Notwithstanding, before proceeding, we considered it our duty to mention candidly to the mother, the unfavourable circumstances of the case; but as her husband was from home and at some distance, she requested that the operation should be delayed until his consent was obtained. Several days thus passed on; meantime, little of the fluid had escaped, and drawings of the child's head were taken *.

But on the evening of the 15th, there took place a considerable discharge of colourless fluid as before, which continued the following day, when we discovered it proceeded from a small orifice at the top of the tumour, that seemed to be a mere point, not larger than what the couching needle would have

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* See Plate, No. II.

made. The tumour gradually receded; and in little more than two days, it was nearly on a level with the parietal bones; but it continued afterwards to be more or less heaved up, though by no means so high or tense as before the rupture; indeed, the watery fluid was almost constantly discharging in a greater or less proportion. It was remarked, that preceding its laceration, and when at its greatest tension, the motions of the tumour were very indistinct, or not at all perceptible; while afterwards they were always well marked with those of the brain, as already noticed. Both of the parietal bones suffered from the exposure, and were in part removed. The arachnoid membrane forming the tumour became less inflamed; but it had one or two peculiar and sudden transitions in this respect, which seemed to correspond with any febrile excitement in the child; however, we could not with equal certainty remark a similar correspondence with the accumulation of the fluid. Yet, notwithstanding, between the 18th June and 4th July, the child seemed not to lose ground, but rather to revive, acquiring something of her wonted liveliness, so as to hold out faint prospects of more substantial amendment, by means of a removal into freer air, which we were consequently induced to urge; but which could not, from unavoidable circumstances, be accomplished.

But, on the 4th and 5th of July, our little patient was remarked to become much more fretful than she had lately been; some fever, green stools, and a return of the purulent discharge from the ears, especially the right one, which soon became fetid; also on the 6th, the membrane of the tumour in the head was observed considerably more injected than of late; this, however, declined considerably on the following day; but, in consequence of a sinking of the vital powers; any faint prospect of amendment formerly entertained, was now lost. Vomiting supervened on the 19th, after there had been on the two preceding days more than a usually profuse flow of water from the head, and the tumour had nearly collapsed. The child seemed to retain all her senses and mental faculties, until the evening of that day when she expired, after suffering a slight subsultus; being sixty-five days after the period that water was first observed to escape from the cranium, and when the child had attained the age of twenty-one months.

Sectio cadaveris by Mr Allan and myself.—The body was considerably emaciated. The tumour of the head was quite collapsed, and its covering adhered firmly all round to the edges of the opening of the skull, which was well ossified throughout, except in the anterior bregma. After being sawed through, its superior section could not be separated, without having recourse to the scalpel, in consequence of a general and strong adhesion of the dura mater to the bone, more especially at the right side. The membranes were greatly injected, and most highly so on the right side, particularly the pia mater. Effusion was very inconsiderable, either externally or internally; but the ventricles, and their communications, seemed somewhat enlarged in capacity. The choroid plexus was considerably expanded, and of a brownish red colour. The right hemisphere of the cerebrum was much softened; indeed, the superior and lateral portions towards the temporal bone were in a dissolved state, so that the cineritious and medullary substances formed one semifluid mixture. But it did not appear that the internal plate of this bone was in a carious state. Neither did the cerebellum shew any thing remarkable.

The right lung was, in one mass, attached to the pleura costalis and pericardii. It was tuberculated superiorly, and in its body; whilst towards its margins it was hepatized. The left lung was also attached to the costal pleura, and partook of the same disease, but in a less degree than the other. There was no effusion in any of the thoracic cavities. There was much flatus in the bowels. The vessels of the small intestines were very conspicuous in several parts; and the mesenteric glands were greatly enlarged and tuberculated. The liver appeared quite natural, and the gall bladder was full of bile of rather a more lively green shade than is generally met with.

Observations on the Physiological Principle of Sympathy, chiefly in reference to the peculiar doctrines of Mr Charles Bell. By W. P. Alison, M. D., F. R. S. E., Secretary to the Medico-Chirurgical Society, and Joint-Professor of the Theory of Medicine in the University of Edinburgh. (*Edin. Med. Chir. Trans.* vol. ii. p. 165.)

To begin with a definition of the term Sympathy, I think we may say, that it is correctly applied to all combinations or successions of the vital phenomena presented by different parts of the body, which we observe so generally, that we judge them not to be accidental, which are independent of the will, and not owing to any necessary dependence on one another, which we can refer to other ascertained laws of the animal economy, of the living actions of the parts thus simultaneously or successively affected.

* * *

Using the term in this restricted sense, it is evident that it applies to two perfectly distinct sets of phenomena, called by Schlegel sympathiae sensitivae et motoriae, what are generally called sympathetic sensations and sympathetic actions; in the one of which, the vital property called into action in the part sympathizing, is a sensation; in the other, a physical change.

The first of these classes,—that of *sympathetic sensations*, such as those which connect the liver and shoulder, bladder and glans penis, hip and knee-joint, &c.—sympathies which are seen chiefly in the diseased state;—I do not propose to consider at present; and shall merely observe in regard to them, that I apprehend they are undoubtedly, in part at least, dependent on nervous connections, between the parts irritated or diseased, and those to which the sensations are referred. I should state, likewise, that I propose, in this paper, to confine myself entirely to the sympathetic phenomena observed in the state of health.

The term *Sympathetic Action*, considered etymologically, must be allowed to involve an absurdity; but in this, as in many other instances, we must be content to sacrifice classical propriety, for the sake of scientific precision; and, I do not think we can substitute any other term, to which stronger objections may not be applied. In particular, I would object to the term *synergy*, which some have proposed to borrow from the French, to express the same meaning; because the French author who has chiefly used the word (Barthez), has not applied it to all the phenomena which are commonly designated as sympathetic actions, but only to a part of these.

What are commonly called sympathetic actions are manifestly divisible into two clases, according as the actions excited are in the organs of organic or animal life. In the first, the phenomenon observed is, that, in consequence of certain changes occurring in a distant part of the system, the living action of some one of the organs, either of involuntary motion, or of secretion, is altered; and this alteration is very various; sometimes it is an increase, sometimes a diminution, of the action that is observed. Of this kind are the sympathetic increase of the flow of tears, from irritations of the eyes or nostrils, or of the salivary glands, from certain impressions on the tongue, the enlargement of the mammae, from certain conditions of the uterus; the constriction of the capillaries, all over the surface of the body, from cold applied to one part only, or from certain irritations of the urethra; the increased action of the heart, produced by various grateful impressions made on the surface of the body,—as of cold, when the body has suffered long from intense heat, or of heat, when the body has been weakened and chilled; the sudden increase of the heart's action, from grateful impressions on the stomach, after long fasting; and the sudden diminution of the heart's action from certain injuries, or rapid diseases of the abdomen.

In the second class of sympathetic actions, in which the organs of animal life are concerned, the phenomenon observed is, that, on an irritation or stimulus being applied to one part of the body, the voluntary muscles of another, and often distant part, are thrown into action; as when the respiratory muscles are excited, apparently by changes in the lungs, in ordinary breathing, or

by irritation of the nostrils or trachea, in sneezing or coughing; the distant muscles concerned in vomiting, by irritations acting on the stomach; the distant muscles concerned in the expulsion of the fæces and urine, by irritation of the rectum and bladder, &c. In these cases it is to be observed, that not only voluntary muscles are thrown into action by irritations acting on distant parts, but several of these muscles, often distant from one another, are thrown into action simultaneously, or in immediate succession, in performing such various and sometimes complicated actions. And wherever *either* of these phenomena is observed in the actions of the voluntary muscles, the term sympathy is applied. It is thus that the muscles of the two eyes are said to sympathize, in preserving the parallelism of the optic axes in all the movements of the eye-balls; and that all the different respiratory muscles are said to sympathize, not only with the lungs, trachea and nostrils, but with one another, in performing the actions of breathing, coughing, sneezing, &c. In most cases of sympathetic actions, both these perfectly distinct phenomena are observed: the explanation of both has generally been attempted on the same principles; and it will be seen, that many of the observations which follow apply to both; although the first of these, the *excitation or alteration of action in the animal economy, by the irritation of distant parts*, is what I shall have chiefly in view.

This striking and important general fact in physiology used to be regarded as denoting, or as depending on, a certain necessary and permanent *consent of parts;* and the reason of this was anxiously looked for in connections or anastomoses of the nerves of the parts irritated, and the parts thrown into action by the irritation, whereby it was supposed that an irritation applied to the one might operate on the other, in like manner as if applied to itself. But the researches of Dr Whytt and Dr Monro on this subject were, as I think, quite successful in establishing two points in regard to such phenomena: 1*st*, That they cannot be explained by the connections of the nerves of the sympathizing parts; and, 2*d*, That they do not indicate any necessary consent or sympathy between *individual parts of the body*, but are, in general, simply the effects of certain *mental sensations*, and that, in these instances, one part of the body sympathizes with another, *only in so far as the sensation, which is the natural and appropriate stimulus of the one, is excitable by the irritation of the other.*

The impossibility of explaining sympathetic actions, by reference to the connections of the nerves, was, I think, satisfactorily shewn by Dr Monro; but, for the successful reference of the greater number of these to mental sensations as their cause, physiology is indebted, I believe, chiefly to Dr Whytt. Any observations that I have to make on this subject, I consider only as somewhat fuller illustrations of the principles which he has laid down in his "Essay on the Sympathy of the Nerves."

* * * *

1. The muscular actions, from irritation of distant parts, which are called sympathetic, appear to coexist in the body only with the indications of sensation. Although various movements may be excited in an animal newly killed, just as in an amputated limb, by irritation of the nerves and muscles of the parts moved themselves; yet, after the cessation of animal life, when we are certain that sensation is at an end, none of the class of movements now under consideration, are exciteable by the causes which were their appropriate stimuli while sensation continued. "Though the muscular coat of the stomach in an animal newly dead," says Dr Whytt, "is excited into contraction by irritation, yet the diaphragm is noways affected by this stimulus; nothing like the act of vomiting is brought on."

2. "That all sympathy," says Dr Whytt, "is owing to feeling, appears evident, because the changes in the body occasioned by (or usually referred to) the sympathy of the parts, are stopped by whatever affects the nervous system so strongly as to overcome the sensations that produced those changes. Thus, the hiccup is stopt by terror, fear, surprise, or other strong passions; and an irritation of the nose will not excite sneezing, if the first effort to

sneeze is attended by acute pain in the muscles of the back or sides from rheumatism.

The actions of hiccuping and sneezing, when just commencing, may very often be stopped by any thing that forcibly arrests the attention, as by calling out the name of the person. Dr Whytt says, he had found a fit of hiccuping to be stopped by the effort of attention required in looking for two or three minutes, on an object so small as to be hardly distinctly seen, such as the impression on a small coin. Every one must have observed, how easily a fit of laughter, produced by the sense of tickling, may be stopped by a new emotion being excited, as by a loud sound, or the entrance of a stranger.

One of the best illustrations of this principle is the fact, which has puzzled several inquirers, that although any one can, to a certain degree, excite the sensation of tickling in himself, yet no one can carry it in this way to such a degree as to excite laughter. The reason is, that the peculiar cutaneous sensation is continually interrupted and obscured by the attention which the mind bestows on the voluntary actions of the fingers employed in the operation, and on the muscular sensations which thence result; whereas, when the operation is performed by the hand of another, as no such interruptions of the peculiar sensation occur, it is felt more permanently and more intensely; and therefore, produces the sympathetic action which we here regard as its full effect.

3. That the different sympathetic actions depend simply on the different sensations which intervene in each case, between the irritation applied and the muscular contraction that results, appears more distinctly from this circumstance, that in several instances the sensations which we regard as their cause, may be excited by irritation of several different parts of the body; and that, in these cases, the same muscular action always results; proving, that what is needful to the excitation of actions of this kind is, not the irritation of particular parts, but the excitation of particular sensations.

In illustration of this, we need only refer to the very different modes in which the sensation of nausea may be excited, not only by irritations of the stomach, but also by particular irritations of the fauces,—by certain effluvia taken into the nostrils,—by certain injuries or diseases of the brain,—in some persons by certain diseases of the heart,—and, in almost all persons, by diseases of the brain, liver, gall-bladder, bowels, kidneys, ureters, and bladder of urine,—by certain movements of the body, as in swinging or sailing, and, by certain emotions of mind. But in all these cases, when the sensation of nausea has been produced in a certain degree of intensity, and lasted a certain time, the action of vomiting follows.

Farther, the action of full inspiration is produced, particularly during the state of syncope, by dashing cold water either over the face, or the shoulders, breast, or abdomen,—parts, the sensibility of which is known to depend upon different and distant nerves.

In like manner, in the irritable constitution of a child, the action of crying, with the sympathetic affection of the lacrymal gland, follows the sensation of pain, wherever excited; and the action of laughing follows the sensation of tickling, wherever excited.

4. While we thus know that irritations of very different parts will excite the same sympathetic action, if they excite the same sensation, we also know the converse of this; namely, that different irritations of the same parts do not excite the same actions, if they excite different sensations.

We all know that most parts of the body are susceptible of a considerable variety of sensations; and a very little observation will shew, that it is only with certain sensations of any organ that any particular sympathetic action is associated.

For example, tickling the fauces with a feather excites nausea and retching; but any solid substance pressed firmly against the fauces, has little or no tendency to produce that effect, and painful inflammation or ulceration of the fauces never excites retching. In like manner, mustard applied to

the nostrils, producing a peculiar pungent sensation, excites the sympathetic action of sneezing, and stimulates, sympathetically, the lachrymal gland. Some very nauseous smells will excite nausea and vomiting, and, at the same time, increase the flow of saliva. The smell of some flowers produces faintness, or even syncope, evidently weakening the heart's action, without any other sympathetic effect. The smell of savoury food excites the salivary glands only. There are many other impressions on the same organ, fully as strongly felt, producing pleasing sensations, which have no sympathetic effect whatever; nor does any such effect result from an injury of that part, however painful. Again, of different irritations acting on the stomach, and producing certain sensations there, one will produce vomiting, another fainting, and a third the peculiar action of eructation.

Case of Tumour in the anterior Mediastinum, containing Bone and Teeth. By James Alexander Gordon, M. D. Physician to the Islington Dispensary *.

Mary Cooper, aged 21, a very stout young woman, was admitted a patient of the Islington Dispensary on the 17th of June 1822, labouring under the usual symptoms of pneumonia. These were in part subdued by copious and repeated bloodletting, but there still remained an irritating cough, and a pulse of 120, which resisted all the usual remedies. The pain of the side occasionally recurred, and was always relieved by bloodletting; but the cough never varied; it was convulsive and suffocating, and was attended with an expectoration, which was at first mucous, and afterwards purulent. The health of the patient had been previously good; and it is worthy of remark, that, even at this period of the disease, there was no emaciation.

On the 19th of August, she pointed out to Dr John Sims, who was attending for me, a small round tumour, below the sternal extremity of the left clavicle, about the size of a nut, pulsating regularly and strongly. From its appearance and situation, it was pronounced at the consultation which took place on the case, to be an aneurism of the aorta, or of the arteria innominata. The patient was freely bled, put upon spare diet, and the occasional symptoms of irritation relieved by appropriate remedies. In the course of three weeks, the tumour, which rapidly increased, rose above the clavicle, and then somewhat receded. The breathing was always oppressed, though she could inspire without pain or cough; the pulse was uniformly 120, and the attempt to lie down always excited cough. On the 7th of November she was removed to St Bartholomew's Hospital, where she remained till the 9th of December, and was then dismissed for irregularity, and came again to the Dispensary.

The tumour remained for some time stationary. She was regularly bled about once a week, and her health gradually improved; but, in the spring of 1823, the tumour, which had for the last four months occupied the same spot, over the sternum, above and between the centre and angle, gradually extended over the trachea, occasioning great irritation, and threatening suffocation. In the middle of June it began to point on the right side of the sternum, the skin got gradually thinner, and at each pulsation it appeared ready to burst, which it did on the 25th, but nothing but serous fluid flowed. On examining with the probe, I found that this was a small superficial sac, occasioned, I presumed, by the pressure of the aneurismal tumour, which at each pulsation pushed the probe out of the sac. No discharge took place after the 1st of August; from which time the tumour gradually receded, and on the 12th of September there was no trace of it. The patient left the Dispensary in better health than she had enjoyed for two years, and went to work.

She again applied on the 17th of October, with symptoms of general fever, and oppressed breathing, but without any local complaint, and she died on

* Lond. Med. Chir. Trans. vol. xiii. p. 12.

the 20th. The body was opened in my presence, on the 22d, by Mr Kingdon, one of the surgeons of the institution, the permission to effect which was obtained with great difficulty, and only then under promise of confining the examination to the chest, the fulfilment of which condition was secured by the presence of the father. The following are Mr Kingdon's notes of the dissection:

"There was a tumour in the anterior mediastinum, closely attached to the upper two-thirds of the sternum, and the sternal extremity of the right clavicle. The left side of the chest contained a considerable quantity of fluid, and the lung was adherent to all such part of the costal pleura not so occupied. The right lung was adherent on its whole surface, and not capable of being detached at any part; its interior was loaded with fluid, and offered the appearance of edematous cellular tissue, resembling lung only in its colour. The heart was flaccid, but its interior arrangement apparently healthy. The aorta and vessels given off at its arch were healthy, but the arteria innominata was completely enveloped by the thickened cellular tissue which connected the tumour with the surrounding parts. The parietes of the tumour participated in the character of that with which it was in immediate connection; thus its anterior, from which the sternum was with difficulty raised, had the close compactness of tendinous expansion; and its posterior lateral portions were more loose and flaccid. The contents were, serous fluid, sebaceous matter, mixed with the hair, the latter not in large quantity, nor in distinct locks, and an apparently fatty mass at the bottom, which, being cut open, proved bony, and, on more careful examination, a bone was detected very nearly resembling the upper maxillary, a portion of alveolar process, which might seem to belong to the upper or lower maxillary, and seven teeth, two cuspidati, two incisores, and three molares. One of the cuspidati has its crown perfectly covered with enamel, and freed from its capsule; the other is covered with the capsule, but is removed from its socket without any connection. The molares are in their sockets imperfectly formed, while the incisores are, by means of their capsules, attached to what at first appeared fat, but which, on closer examination, seems to possess the character of palatine membrane."

Besides Mr Highmore's case, published in 1815, and those alluded to in that publication, there are many on record, in the Philosophical Transactions *, which may be fairly classed with the one just related, since I should consider the tumour had co-existence with the subject from which is was taken, and was carried without inconvenience, till inflammation in its neighbourhood excited that fluid secretion, upon which its enlargement and consequent inconvenience depended.

The preparation is in the possession of Mr Stanley.

[*We suspect this rather to be a case of enlarged thymus.*—See p. 39. Ed.]

Case in which Secale Cornutum appeared to be efficacious in expelling Coagula from the Uterus; with Remarks. By William Mackenzie, Andersonian Professor of Anatomy and Surgery, and one of the Surgeons of the Glasgow Eye Infirmary.

Between ten and eleven o'clock of the evening of the 1st current, I was called to visit Mrs ————, who, about ten o'clock of the morning of the same day, had been delivered of twins, her first children. I was given to understand by the midwife in attendance, that the delivery had been rapid and easy, and that, soon after the second child was born, a large double placenta had been expelled entire. But the uterus continued extremely large, far up in the abdomen, and very hard. In the course of the forenoon a large clot of blood had come away, but this had not altered the state of matters; and the midwife suspected the presence of a third child in the uterus.

* Case of a male greyhound passing per anum a mass resembling a whelp.—Vol. xix. p. 316. Account of a child born with a tumour near the anus, containing some rudiments of an embryo.—Vol. xlv. p. 325.

I found the uterine tumour very hard to the hand laid upon the abdomen, of a globular and elevated form, very high in the abdomen, little (if any) less than the uterus is after the expulsion of a first twin, and while the second yet remains undelivered. As I had little doubt, however, that it was filled merely with coagulated blood, I hesitated for a while whether I should not at once introduce my hand into the cavity of the uterus, and remove the coagula, or try the effect of the secale cornutum.

I resolved on the latter; and, having weighed out fifty grains, and bruised them, I ordered the whole to be infused for ten minutes in a cupful of hot water. One-half of this infusion was administered, without any perceptible effect. After half an hour, the other half was given along with the bruised pieces of secale. This was immediately followed by extensive efforts, and a very large quantity of coagulated blood was discharged. The uterus was reduced to its usual size and situation after parturition. The patient soon after fell asleep, and slept for four hours, and has since done well.

Two objections may be stated to this case.

1. It may be objected, that I should rather have removed the coagula by the hand, introduced into the uterus. But I would reply, that this operation is attended, especially after the interval of twelve or thirteen hours from the time of delivery, with very considerable pain and irritation; and that this irritation is likely to concur with any other predisposing or exciting causes of inflammation which may be present.

2. It may be said that the expulsion of the coagula did not depend on the influence of the secale, but might have been incidental, or an effect of the mere stimulus of hope. I admit that I assured the patient that I had much confidence in the medicine which I was about to give her. But that the event was incidental does not appear probable, when we consider that twelve hours had passed without the uterus contracting to its ordinary size, and that, for seven or eight hours, no expulsive efforts whatever had taken place.

In a course of lectures on Materia Medica, which I lately attempted, I placed the secale cornutum among the *nervous excitants*. The phenomena of convulsive ergotism appeared to justify my thus classifying this substance among the medicines which affect the muscular system, through the medium of nervous excitation. This view of the secale cornutum, if correct, may also serve to explain, in some measure, its effects in parturition, which is an action, not of the uterus alone, but also (nay chiefly) of the diaphragm and abdominal muscles.

An American graduate has asserted, that the secale cornutum, in whatever manner exhibited, has little or no operation on the system of the male. The pulse, he says, is neither elevated nor depressed by it; and, excepting some nausea or vomiting from large doses, no other effect is manifested. To the uterus, he supposes, its whole force is exclusively directed. This notion is contradicted by the phenomena of convulsive ergotism, such as they have been observed and described by many authors. This disease, as described by Sringe, began with a disagreeable sensation in the feet, a kind of titillation or founication, speedily followed by strong contraction of the fibres, pain in the head, vertigo, delirium, spasms in the limbs, and opisthotonos. Of this disease, as observed by that author, many died, especially children. It evidently existed in the muscular system generally, and there can be no doubt that it affected males as well as females *.

So similar are the symptoms of convulsive ergotism to the phenomena displayed after a dose of nux vomica, and some other of the nervous excitants, that it is extremely probable there exists in the secale cornutum some alkaloid principle, analogous to strychnia.

SPREULL'S COURT,
21*st April* 1826.

[*This paper was copied, we believe, from the London Medical and Physical Journal, but we cannot lay our hands on the number.*]

* See Tissot's Letter to Sir George Baker, in the Philosophical Transactions, vol. lv. p. 113, for an account of the different kinds of ergotism, and the instances of their occurrence.

Fungus Melanodes of the Brain. (Lancet, October 1826.)

Mr Wardrop exhibited, at the hospital, a most interesting specimen of melanosis of the brain, taken from a patient (a farmer) fifty-eight years of age, whose right eye he had extirpated upwards of three years ago. The operation consisted in removing a growth of nearly ten years' duration from the right orbit, of so large a size as to render the extirpation barely practicable, from its close contact with the bony cavity. No remains of any of the natural structures of the globe were recognizable in the diseased mass, except the sclerotica, which had burst asunder, and was distended by the different portions of the tumour. This tumour consisted of a dark brown or blackish substance, rather firmer than brain, but in some parts so soft as readily to be washed away with water.

The patient recovered quickly after the operation, and got apparently into perfect health. He continued free of ailment, until about fifteen months ago, when he had a fit, which left no effect but that of weakness, and on the following day he went about his farm as usual. He had a second fit six months afterwards, which was followed by a great degree of weakness, and some difficulty of speech. In a few months he had a third fit, followed by loss of power of his right arm, and his speech. The fits now became more frequent, and he lost the power of his right leg, together with that of both limbs of the left side, except the joint of his left hand, which was never affected, and which he used to make signs with until his death. The powers of the mind were never impaired.

Appearances after Dissection.—The vessels of the dura mater were slightly injected, and there were several small pieces of lymph in the superior longitudinal sinus; the pia mater was very vascular, thickened, and opake at several points. The substance of both hemispheres, at their posterior part, was unusually soft, and readily yielded to a slight pressure of the finger. On cutting into the left hemisphere, on a plane with the corpus callosum, a large dark sanguineous coloured mass presented itself, which at first had the appearance of coagulated blood; but, on examining it minutely, it was found to be of a firm consistence, having numerous small vessels passing through its substance. This mass seemed to have no connection with the surrounding brain, which was quite natural, and formed a sort of bed for it. By immersion in water, a quantity of blood was extracted, and the mass which remained was of a dark brown colour, consisting of a very loose cellular tissue. In the substance of the right hemisphere there were also several dark coloured masses of the size of a pigeon's egg, very similar in texture to that found on the left side.

The ventricles contained a small quantity of serum, and the choroid plexus was of an unusually pale colour. The cerebellum appeared natural. The optic nerve, on the right side, from its bifurcation to the orbit, was much wasted, having no medullary matter, and seemed to consist only of neurilema. At the extremity of the nerve, where it had been divided during the extirpation of the eye, there was a hard tumour of the size of a small nut, of a black granular appearance.

Retention of a Foreign body in the Stomach, for several years. (Nouvelle Bibliothèque Medicale, Avril 1826.)

Denis Faucon, æt. thirty-nine, by trade a gardener, applied for advice on the 2d July 1825. His symptoms were an altered appearance of countenance, which was shrivelled, emaciated, flavid, and indicative of extreme dejection. The intellectual faculties were disordered, there was deep melancholy, weakness of muscular action, laborious and frequently interrupted sleep, the patient often calling out that he would introduce his hand into the stomach to withdraw from it the cause of his indisposition; the *papillae* of the tongue were unusually prominent and covered with a layer of yellow coloured mucus; the

apex and margins of this organ were of a cherry red colour, there was inclination for food, a sense of weight in the region of the pylorus, which, during the process of digestion, became an acute pain; this latter change supervened about an hour after aliment was taken. His repasts were succeeded by swelling, tension, and insupportable fulness in the epigastric region, and supervened earlier to a vegetable diet, than to one of animal food. The pain in the pylorus already mentioned, was accompanied with flatulent explosions, frequent nausea, followed by vomiting, which he was often compelled to excite by introducing the fingers into the fauces, with a view to remove the inexpressible anguish which tormented him. The matter rejected from the stomach was generally liquid; and when it contained any aliment, the proportion did not equal the quantity originally taken in. One thing worthy of remark was, that vegetables and delicate meats were more frequently rejected than articles of a substantial nature, such as beef and pork. Sometimes when he partook of a more hearty repast than usual, even digestion was not attended with pain or other disturbances. The alvine secretion was of a natural appearance, but often indurated. There was no disturbance of the vascular system, or of the organs of respiration. There was extreme emaciation, considerable debility, and complete *marasmus*. His complaint existed about two years, and developed itself by symptoms of gastric disturbances, which became progressively aggravated.

This case was considered as one of chronic gastritis and scirrhus of the pylorus.

On the 5th July, at midnight, the nausea was preceded by the ordinary symptoms, and shortly afterwards a hard body was rejected from the stomach, which on examination the following day, proved to be the stone of a peach. The patient then remembered having been in the habit, for some years previous to the commencement of his illness, of going to bed with a peach stone in his mouth. July 8th, patient continued well throughout the day; but on the 7th all his former symptoms returned and continued for several days. At last, by a soothing regimen, and mucilaginous drinks, all symptoms of derangement ceased, and the patient was restored to perfect health in January following.

The author considers the retention of a foreign body in the stomach, for so long a period, as of very rare occurrence; and he ascribes the pain in the pylorus to the foreign body having been forced into that orifice by the contractions of the stomach; the removal of the peach stone from the pylorus was effected by the ventricular action, whereby the whole of the food was enabled to pass into the intestines, which explained why nothing but liquid was rejected during vomiting. The circumstance of coarse food passing through the pylorific orifice, with much less suffering to the patient than delicate articles of nourishment, he thinks constitutes a diagnostic mark between derangement produced by the retention of a foreign body in the stomach, and that occasioned by scirrhus of the pylorus, as in this disease the coarse ingesta are productive of most suffering.

Gangrene from Spurred Rye *.

A husbandman, æt. twenty-four, of a strong constitution, was troubled for some days with headache and lassitude of the extemities. On the 2d of February 1824, he complained of the following symptoms, viz. about an hour after breakfast, of which he partook with keen appetite, he experienced in walking such extraordinary weakness of his legs, that he had scarcely power to support himself, and was apprehensive of falling at every step; his head was confused, and vision became indistinct, and objects appeared to be turning round him. At last he reached a house, and took a little brandy, which relieved him. After some hours rest, his complaint left him, and he succeeded in walking home,—a distance of about a league. In the night time, he felt violent pains in his legs and arms, which left him in the morning, but re-

* Observation d'Ergotisme gangreneux, par M. Souvet. Nouvelle Bibliotheque Medicale, Avril 1826.

turned when he again went to bed, and with such severity as to prevent his sleeping, though they were scarcely felt during the day. On 6th February, in consequence of the occupation of the patient, and the character of his pains, he was supposed by our author to be affected with rheumatism. His appetite was tolerable, and the digestive organs performed their functions. Ordered to use frictions of balm and laudanum to his limbs, and to have the aromatic vapour bath. February 14, pains almost ceased in his arms, but continued with the same severity as formerly in his legs, to which he was directed to apply blisters. 18th, No complaint except in the right leg and foot, where the pain was more acute than formerly;—18 leeches to be applied on the pained parts. Passed a better night, the leeches to be reapplied. The relief, however, is of no long duration, the paroxysms of pain are now more frequent, and supervene even in the day time. He complained of general uneasiness and loss of appetite; the toes of his right foot were affected with lancinating and almost incessant pain; the large toe felt cold, and appeared of a livid violet colour, its dorsal aspect presenting around the bite of a leech, a point the size of a franc, of a gangrenous nature. The pulse, as it could not be felt, either at the wrist or at the ham, was examined at the temples; it was weak and somewhat frequent. M. Louvet could not at first say how long this anomaly existed in the state of the pulse, as he forgot to examine it at the outset of the case; but he attended to it more particularly in two brothers of the patient, who were similarly affected, and found no pulsation in the diseased extremity.

M. Louvet now commenced to investigate the cause of these symptoms, which he ascertained to proceed from the use of bread made from spurred wheat, and which was immediately interdicted. On the evening of the 29th of February, the patient experienced oppression at the chest, with incessant cough, followed by spitting of frothy blood, of a vermilion colour: the quantity expectorated amounted to about eight ounces. After this hemoptysis, the pulse could be more distinctly felt, at those points where it was formerly imperceptible. Venesection was once performed at the arm, which the patient supported well. The symptoms ceased in the night, and, for the first time, he slept quietly; the wine of cinchona was suspended, and lemonade substituted. March 3., patient continued better, gangrene was suspended. The following day, the parts affected began to slough,—the one half of the instep, and the dorsal aspect of the three first toes, were denuded. It was found necessary to have the second phalanx of the large toe, and the two last phalanges of the two nearest toes, removed. The cure, though completed, was extremely tedious, owing to the denuded parts having been seized with necrosis.

In one of the brothers of this patient, already mentioned, it was the right arm, in the second, it was the corresponding leg, which were attacked; and the most corpulent of the three brothers suffered most. The wife of one of the brothers, and her three children, who partook of the diseased bread, had no indisposition. In his reflections, the author informs us, that this affection was known to Galen, and that, in 1588, it shewed itself as an epidemick in Silesia.

New Method of Percussion of the Thorax.*

M. Priory read a communication regarding a new mode of percussion of the chest. This consists in striking, upon a circular piece of fir, about a line in thickness, and an inch and a half in diameter, supported by a small bent handle. The fir recommended is that used by lute-makers. By this method, it is thought that a louder sound may be obtained, and that a variety of them may be distinguished through the clothes of the individual; that the percussion may be stronger, and produced by a more sonorous body, than the fingers; that we can distinguish better the point to which percussion must be applied; and that we protect the chest against the effects of the impulse.

* Revue Medicale Française et Etrangere, Avril 1826.—p. 176.

M. Priory made experiments on the cheek distended with air, where percussion afforded little sound, but where it was produced to a considerable extent, by the method already described. He obtained different sounds from the abdomen, according to the matter placed under the points to which the circular portion of fir was applied, as gas, liquid, or solid matter. He assures us that, in this manner, we may determine within a line almost, the situation occupied by each viscus in the abdomen, and that this mode of percussion will be attended with great utility in exploring many diseases, such as peritonitis, ascites, hernia, &c.

In the *Ephemerides Medicales* of Montpellier, an interesting series of clinical reports are given by Professor Lallemand, Broussonet, Delmas, and Rech, each in his own department. It is needless to make any remarks on the utility of such reports. A great mass of interesting matter has been already accumulated, and we intend occasionally to present our readers with a few of the most interesting cases.

Wound of the Thorax, with effusion of Air.

At five in the evening of the 11th September, Chambrand received a wound with a small sword in the left axilla, which seemed to penetrate very deep. Immediately on receiving it, the patient felt a difficulty of breathing. No blood flowed from the mouth, but a great quantity from the wound. The surgeon bled him to twelve ounces, and applied ten leeches. At 11 P. M. he was brought to the hospital in the following state: Expression of anxiety on the features; great difficulty of respiration; impossibility of lying on either side; pulse small, frequent, and sometimes intermittent; V. S. ad ℥ xvi. cold applications to the chest. At four o'clock, the pulse appearing to rise, the bleeding was repeated. The next day, September 12., Monsieur Lallemand, struck with the difficulty of breathing, and the intensity of the other symptoms, examined the chest by the stethoscope and percussion, and discovered that the left side was full of air, which was compressing the lung (absence of respiration and sound clearer on the affected side). He consequently gave a favourable prognosis. As the patient was very stout, a fresh bleeding was ordered, and was again repeated in the evening. He went on well, and was discharged, cured, the 17th September.

Haematuria.

In this interesting case, the patient had been passing blood with his urine, for nearly seven months before he came under Professor Lallemand's care, in December 1825. He was very frequently affected with retention of urine in consequence of clots of blood obstructing the urethra. He felt a constant pain in the lower part of the abdomen, with a lancinating pain at the margin of the anus. An elevated temperature increased the difficulty of making water, while it was rendered easier by the motion of a carriage. The urine is thus described. The superior layer, some lines in thickness, was of a milky white colour, resembling a thick emulsion; the middle portion, nine-tenths of the whole, was of the colour and consistence of the lees of wine; the bottom of the vessel was covered with pure blood, both liquid and coagulated; the clots varied from the size of a pea to that of a nut. The patient's face was extremely pale and anxious. A great variety of remedies had been used without success. Mr L. prescribed five pills of turpentine (*terebinthine*), two grains each morning and evening; two ounces of rhatany, boiled with eight ounces of water, in the forenoon; a bath every second day. Every eighth day the dose of the medicine was increased; so that, in a month, the patient took forty grains of turpentine and six ounces of rhatany root in the day. Under the influence of this treatment, the urine became less thick, and less deep in colour; the quantity of blood diminished, and the clots disappeared. The painful feelings in the abdomen and margin of the anus were alleviated

but the patient had occasional relapses. At length, however, during the middle of the night, he was seized with most violent pains in the calves of the legs and thighs, accompanied with violent muscular contractions. He had been subject to similar attacks at a former period. This continued about two hours, and then left him. Next day the urine was perfectly clear, and has continued so ever since. He is perfectly restored to health.—*Ephemerides Medicales*, tom. ii. Mai 1826.

Frontal Neuralgia.

Esche Francois, thirty-six years of age, when in Spain, received a blow (coup de stylet) on the right frontal protuberance, which fractured it. The wound was enlarged, and a small scale extracted. It healed in fifteen days; but he has ever since suffered from pain in the orbit, with progressive weakening of the sight. In 1818, he received some relief while under the care of Mr Delpech of Montpellier; but this was not of long continuance. On the 3d November 1821, he came under the charge of Mr Salaurie, who reports his case. He was pale and sunk, with an appearance of melancholy and despair. His strength appeared exhausted. His pulse was slow and weak. He complained of severe pain in the orbits. The following changes took place daily in his complaint: At sunrise the pain became exceedingly violent, with shootings, which seemed as if they would split his head into two parts. He was then perfectly blind. Between ten and eleven he was a little better, and could distinguish objects. About four o'clock he became blind again, with a very dilated pupil. The pain still continued, but without the shooting and darting feelings of the morning. The integuments of the head had become so very sensible that he could not suffer the hair to be touched, without screaming. Leeches, &c. were tried, but without benefit. A grain of white oxide was divided into sixteen pills, and one a-day given. On the third day, he was better. He continued this treatment, with some interruptions, till the 1st of December, when he was almost entirely well; pains gone, and vision restored, except towards evening, when it was a little obscure. In a short time afterwards, he was perfectly recovered.—*Ephemerides*, 1r Fevrier 1826.

Aphonia produced by Lightning.

In the case related by Mr Desjardins of Havre, a sailor, when ascending the mast of his vessel, during a storm, felt a violent shock in his right thigh and leg, which were immediately paralyzed. He attempted to cry out, but could not. He continued lame for ten days, but after that time he could walk tolerably well. Complete aphonia, however, remained. When seen thirteen days after the accident, he could emit no kind of sound, however violent the efforts he made. On examination, the thyroid and cricoid cartilages, the glands and surrounding muscles, were visibly engorged, all the interior part of the neck was hard and tumefied,—pulse quick, but not hard,—no pain, the tongue free in its movements,—the uvula, tonsils, and velum, were in a state of inflammation,—twenty-five leeches were applied,—five days afterwards, the patient could speak but very little,—leeches were again applied, and in a few days, all traces of aphonia had disappeared.—*Annales de la Medecine Physiologique*, June 1826.

Case of Hemorrhage from the Ovary. By Monsieur Drecq, Physician at Moulins.

A servant girl, thirty-two years of age, thin, but menstruating regularly, had the imprudence, about six years ago, to bathe in very cold water, when covered with perspiration. Since that time the skin has been of a yellow colour, and she has suffered from frequent pains in the stomach and belly, with hiccup. In October 1825, she was seized with very violent colick,

which continued for six hours; since then, the menstrual flux has appeared every fifteen or twenty days. On the 18th January 1826, the violent pain returned without a known cause,—she vomited what she drank,—towards morning she was better, and slept for several hours, till again roused by a return of the pain, with coldness in the lower extremities, hiccup, and cold sweat. M. Drecq was sent for at eleven, nearly twelve hours after the appearance of the pain,—the face was colourless, features sunk, pupils dilated,—hands and feet covered with cold sweat,—abdomen tense, inflated, extremely tender to the touch, especially in the hypogastrick region,—the patient complained of an enormous weight at the stomach; there were frequent vomitings, with fits of fainting,—pulse small and thready, irregular, and intermittent, during the persistence of the pains, regular at other times. Forty leeches were applied, and the semicupium was ordered. She died at two in the morning.

The body was examined fifteen hours after death. On opening the abdomen, about 3 lb. of blood flowed from its cavity, the peritoneum, stomach, and bowels were healthy; a large clot of blood, equal to the size of two fists, covered the uterus. On removing this, the womb was found of its natural size, as well as the right ovary;—the left was of the size of a hen's egg, inflamed and black, with a fissure on its anterior surface, from which there flowed, on pressure, a dark coloured blood, resembling that effused into the abdomen. The parenchymatous substance of the ovary resembled exactly that of the spleen of a person who has died of scurvy. M. Drecq considers this girl to have died of chronick inflammation of the ovary, which, in consequence of distention, had at last burst, and poured blood into the abdomen. The discharge of blood he conceives to have first taken place at a remote period, because the lower strata of the clot were soft, while the superior were very firm.—*Annales de la Medecine Physiologique*, Mai 1826.

Acute Pericarditis.

From an analysis of thirty-two cases, Mr Louis concludes, that this inflammation is characterized by pain in the region of the heart, sometimes extending to the back and epigastrium, coming on suddenly, accompanied with a sense of oppression, to a greater or less degree, and sometimes in some cases, though not always, constantly with palpitations: by the irregularity and intermittence of the pulse, and more particularly by the absence of sound in the region of the heart, the rest of the chest being perfectly sonorous.

To these symptoms are sometimes added syncope and infiltrations of the extremities. He thinks the disease may be predicted in half the number of cases where it exists, and when free from complication, he considers it to be as easily recognized as the best marked pleurisy.—*Journal Universal des Sciences Medicales.*

Broussaism.

We have in a former number taken some notice of Mr Broussais' opinions. Our readers are aware that Mr Broussais is the editor of a journal in support of his peculiar views, entitled "Annales de la Medecine Physiologique." It is published monthly, and has already existed for five years. He is at present reprinting in it the series of Aphorisms on Medicine, which first appeared in the "Examen des Doctrines Medicales." To each he adds a long and curious commentary. We are tempted to copy a specimen or two into our pages, as they relate to a subject which is at present exciting much interest and discussion in England. We despair of doing justice to Mr Broussais' very peculiar style, nor are we quite clear that we can always understand his meaning, though we have perused most of his writings very diligently.

"Aphorism 145.—The greater number of cases of dyspepsia, gastrodynia, pyrosis, cardialgia, and all of bulimia, are the effect of gastro-enteritic inflammation."

Comment.—Medicine formerly adopted as many diseases as there were forms or symptoms in our maladies. Thanks to the physiological doctrine, a reformation has taken place in this respect,—diseases are now founded on the organs and on their essential indications. The new doctrine neglects the different forms of suffering in the organs, so far as these do not furnish different indications.

Now gastro-enteritis may, without ceasing to be the same disease, and without any important difference of indication in the treatment, shew itself under all the forms or groups of symptoms announced in the Aphorism. It is needless, then, to make them different diseases: all that is important is, to point out the cases where these groups are independent of inflammation, for it is only then that they constitute a particular disease. To do this, we must have recourse to physiology. Independently of inflammation, pain may arise in the stomach from many causes, more or less irritating. The sudden impression of cold drink,—indigestible matters taken in large quantity,—the irritation of an organ, such as the uterus or kidneys, which has a strong sympathy with it.

Certain mechanical motions, such as sailing,—the motion of a rough carriage,—may act upon the stomach so as to produce violent pain in it. The inflammation of the large nervous trunks has sometimes so strong an influence on the stomach as to give rise to gastralgia or cramps. It is also possible, that a pain, seated in some of the nerves of relation, may suddenly transport itself to those of the stomach. In all these cases there is no inflammation at first, and the pain may be removed by the diffusible stimulants, antispasmodics, &c. These may be had recourse to whenever inflammation does not exist; but such is the nature of our tissues, more especially of those now in question, that if the irritation, although nervous at first, be prolonged for a certain time, it produces an afflux of blood, heat is developed, and inflammation comes on, in virtue of the law, " ubi stimulus ibi affluxus." This conversion will be most sudden where the remedies employed have been most irritating. From hence, the necessity of never continuing too long the use of stimulants and tonics in the affections of the stomach, however purely nervous the case may seem to be. These views should never be lost sight of: we may apply them to cases in which acidity is extremely troublesome, and where it produces the burning heat in the throat called pyrosis. This acidity is very often accompanied with evident symptoms of inflammation, and yields to the remedies adapted to it: but there are cases in which inflammation does not seem to exist, and where the patients are evidently relieved by absorbents. Be on your guard; these absorbents are alcaline substances, more or less irritating, and their continued employment never fails to produce inflammation in the mucous membrane. Experience has left us no doubt on this subject.

We see, then, how delicate the shades are which separate nervous pains of the stomach from inflammation. As to bulimia, as it always supposes an increase of heat in the stomach, so it is necessarily dependent on inflammation, whenever it is not an effect of convalescence, or of a rapid increase of the body at puberty. Even in these two cases, it has a tendency to inflammation. But it is by the signs which are proper to the inflammatory state, rather than by the kind of pain or alteration of the appetite, whether increased or diminished, that the question is to be decided.

Want of appetite may proceed from an obstruction in the intestines, as bulimia may arise from a diarrhea. But the want of appetite which comes on in persons who have been long affected with gastric pains, vomitings, &c. &c. may proceed from the softening and destruction of the mucous coat of the stomach.

" Aphorism 146.—Intermittent umbilical colicks, with constipation, and without tenesmus, characterise certain shades of inflammation of the mucous membrane of the stomach, more particularly a chronic state, if the symptoms of peritonitis are not present; but this interitis is more frequently indolent than painful."

"Aphorism 147.—The lymphatic glands of the mesentery become inflamed only in consequence of interitis, and this double inflammation, in its chronic state, constitutes tabes mesenterica."

Anatomico-Pathological Observations on Hydrophobia and Rabid Madness. By Professor Rossi.

In this memoir, it is necessary to remark, that Professor Rossi makes a distinction between hydrophobia and canine madness. The former term he restricts to its literal meaning; and proves, that it may take place spontaneously in the human body. Canine madness, on the contrary, can only be communicated to man by the bite of a rabid animal. The period at which hydrophobia passes into canine madness, is known by the copious discharge of saliva, and the desire to bite at surrounding objects.

Professor Rossi commences his memoir with cases of spontaneous hydrophobia. In one case, in the archives of the academy, hydrophobia tetanus, was a consequence of the internal use of cantharides. 2*d*, A man, 67 years of age, was seized with syncope; on recovering, he was attacked by fever, preceded by a cold fit, which continued nearly eight hours. During this time he frequently called for drink; but when it was presented to him, he refused it with horror. To the cold fit succeeded a hot stage, and the desire and horror for liquids increased. He survived twenty-seven days, without being able to swallow any liquid, subsisting almost entirely on bread; he had no return of fever. On the twenty-fifth day, he made an effort to force himself to drink; this brought on an epileptic paroxysm, which returning frequently, carried him off on the twenty-seventh. On dissection, the vessels of the brain were remarkably full of blood; no other change was discovered. It afterwards appeared, that he had been using cantharides internally. Another case we are induced to notice from its singularity. A lady, 30 years of age, began to have a desire to drink greatly beyond the usual quantity. This increased to so great an extent, that, after three years, she drank two bucketfuls during the short summer night. She was suddenly seized with so great a horror for liquids, that the very naming them threw her into convulsions. She died on the evening of the fifth day. Vessels of the brain very full of blood; a little reddish serum in the ventricles. Four cases more of spontaneous hydrophobia are related, all of which proved fatal. A case of hysteric affection, with great horror for fluids, occurred in a lady. She recovered after the application of the actual cautery to the neck.

It is well known that dogs become morose and melancholy, seeking solitude, shunning food and liquids, and die in this state, without either attempting to bite or to run away, as those do who are affected with canine madness. Several experiments are then detailed, from which it appears, that dogs or cats, after being confined and starved for a certain period, refuse to eat when food is placed before them. Professor Rossi concludes from his observations and experiments, that it is neither the bite itself, nor mere apprehension, that causes canine madness, but a something else (a tertium quid) which may be called a poison or contagion, and that hydrophobia is not always followed by canine madness; and that the latter appears only in consequence of the bite of a rabid animal. He also informs us, that a healthy dog trembles and howls piteously at the sight of a rabid one, and allows itself to be bit without attempting to escape. *Canine madness* Professor Rossi considers as incurable, in the present state of our knowledge. The following case is interesting, from the age of the patient, as in it imagination could produce no influence:—

An infant, six months old, was bit in the right cheek by a mad dog; and her sister, six years old, was bit in the right leg; the wound of both healed. In nineteen days afterwards, the infant refused the breast. On the 20th, the cicatrice on the cheek became inflamed. On the 21st, the child died, without having been able to swallow. Forty-eight days afterwards the sister died rabid. Five persons were bit by a mad wolf; the first bit was a

young man of twenty-eight years of age; he had five different wounds, which were all cauterized within twenty-four hours, and mercurial frictions were employed. On the twentieth day he was salivated. On the twenty-fifth, symptoms of hydrophobia appeared. On the twenty-ninth he died, tearing with his teeth the coverlet of his bed. All the others escaped. A series of experiments are now detailed, in which hydrophobia was produced in cats confined without food or drink. Dogs bit by them died rabid, or were killed at different periods of the disease, to observe the post mortem appearances.

We extract the following:—A cat became rabid, from having been confined for four days without food and without drink. On the evening of the fourth day, two dogs were introduced into the room. They trembled at the sight of the cat, which immediately bit them severely, the one on the nose, the other on the back. The cat was instantly killed with a spear. The dogs also became mad, first the one, which was bit on the nose, afterwards the other. They were both killed when they began to bite at surrounding objects.

The principal morbid alterations observed in the bodies of hydrophobic patients, reduce themselves to three. 1*st*, The vessels of the brain and meninges full of blood: 2*d*, A smaller or greater quantity of coloured matter in the stomach: 3*d*, Sublingual glands, sometimes only swelled, at other times swelled and inflamed, rarely ulcerated, sometimes inflamed and empty. From what precedes, Professor Rossi concludes, that there is a peculiar poison produced in rabid animals, the insertion of which into a wound is necessary for the production of canine madness. "It is easy to observe on one's self," he says, "that when yawning or speaking loud, there flows from the mouth, with an impetus like spurting, an aqueous humour." This proceeds from the sublingual glands, and ought not, in my opinion, to be confounded with saliva. These glands correspond to the teeth, which serve for biting, and are compressed in that act by the genis glossi and mylohyoid muscles. When the base of these glands is pressed upon in some who have died rabid, there flows from their ducts a bloody fluid. It appears to me probable, that it is this humour which, like the poison of the viper, is deposited in the wound; and it confirms this opinion, that these glands in some who died rabid, were found empty; that there are intervals between the periods when the desire of biting is strong; and, finally, experience has proved, that if a number of persons be bit by the same animal, the first wounded is most liable to be seized with the disease. I do not think that the genista-luteo tinctoria proposed by Maro Chetti to prevent and cure hydrophobia, merits the confidence he places in it. The actual cautery was always employed at the same time. We owe to him, however, the discovery of the cauterization of the sublingual glands, a discovery, I consider, of great importance. I have cauterized the wounds of many bit by cats and dogs, who were proved to be mad, and when performed in a few hours after the accident; and I cannot adduce one single instance in which they appeared. I used no other remedy, and this alone proves to me, that the disease depends on a peculiar poison." From what has been said, we may deduce, says Professor Rossi, the following corollaries:—

1*st*, That hydrophobia, taken in its true sense, admits of cure; and is not necessarily followed by canine madness, except when it has proceeded from the bite of a rabid animal.

2*d*, That if the animal which inflicted the wound was not mad at the time, but becomes so afterwards, there is no danger.

3*d*, That consequently in the bite of a rabid animal, there is present, in order to communicate the disease, some poison which does not exist in an animal not rabid.

4*th*, That canine madness has two stages; the first hydrophobia, the second rabidity. The second period is distinguished by the frequent discharge of saliva.

5*th*, The actual cautery ought to be immediately applied to the wounded part.

6th, If, in spite of this cauterization, or if it has been ill performed, or at too late a period, the precursory symptoms, such as melancholy, disturbed sleep, loss of appetite, with a painful feeling in the cicatrix, shew themselves, that cautery should be again applied to the wounded part, and the sublingual glands* also cauterized, even though they should not appear to have undergone any alteration.

7th, At this period, if the patient can swallow, emetic tartar should be given, so as to evacuate the stomach.

8th, Even should the disease appear in spite of all this, in order to prevent the rabid period, I would have recourse to the actual cautery on the neck.—*Omodei-annali Universali di Medicina. January and February* 1825.

Antiquity of Vaccination.

M. Prela, Physician in Ordinary to his Holiness, the present Sovereign Pontiff, has just published a work under the following title:—"*Il Boa di Plinio Congettura sul la Storia della Vaccinazione, Milano*, 1825,† in which he endeavours to prove, and with some semblance of truth, more especially in consequence of some quotations from Celsus and Pliny, that vaccination was known to the ancients under the term *boa*, which would seem to indicate that it derived its origin from cattle. On this circumstance, the author founds the following ingenious hypothesis, viz. that this disorder, modified by human organism, into which it has been transferred from cows, would insensibly degenerate into variola; so that according to this idea, the actual extinction of this last disease by the vaccine virus, can only be viewed as a retrogression to its primitive origin.

Doctrine Medicale expliqué d'apres les Theories enseignées d'apres Hippocrates jusqu'à M. Broussais. Par J. L. Michu, M.D., &c. Ancien Professeur particulier de Medecine et Physiologie, Membre de plusieurs Académies Litteraires et Medicales, Medecin du Bureau de Charité, et Chirurgeon Major de la Garde Nationale, dans le Quatrieme Arrondissement de Paris. 8vo. Pp. 440. Paris, Compere, &c. 1824.

Doctrines of Medicine expounded, according to the Theories taught from Hippocrates down to Broussais. By J. L. Michu, M. D. &c. 8vo. Pp. 440. Paris, Compere, and Others. 1824.

We beg pardon of the Doctor; his book was remitted to us from Paris, to have appeared in our Journal, at least a year ago, and has only been delayed, we are sorry to say it, from its demerits, and yet it is a clever book. Our business is with facts, almost solely; the most ingenious views, if unsupported by facts, we allow to sink quietly into that oblivion which always awaits them, and we would not cruelly prolong their existence by unseasonable comments. On a work, therefore, of which the burden is professedly mere theory, we claim the privilege of being brief. We believe a more impenetrable display of learned nonsense was never promulgated, than in the pages in which our author pretends to develope his own theory. His words and typography are, P. 9.

"Here I discuss.

"XV. Life has, without doubt, a general medium of action; a medium, which, as appears to me, it is natural to search for between the vital principle which sets it in exercise, and the movement, which is its immediate result.

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* I have not had an opportunity of performing this cauterization; but from the observations of Marochetti, and from what I have myself observed in the bodies of those who have died rabid, I consider it of great importance.

† Nouvelle Bibliotheque Medicale, p. 1. Fevier 1826.

According to my view *(pour moi)*, this medium shall be tonicity.

XVI. The creating power (reproductive?) and the principle of motion, are merely the same thing. Tonicity is the lever which throws that power or principle into action, in order to produce all the phenomena proper to organized bodies; from it the exercise of life commences. The first mode embraced by the matter which is organized, is the tone which the vital power impresses upon it.

Fibrillous contractility is an effect of which tonicity is the cause; the one maintains the other in a state of dependence. It may be said, abstractly, that tone precedes contractility, in other words, that life is the cause of motion, that contractility is the effect of it, and that tonicity is the means by which it is effected.

Tonicity belongs to all organized bodies, to all tissues, to all systems of organs; it presides over their nutrition, and the functions which are proper to them.

In proportion as organization becomes more complicated, as the new organs are developed, tonicity is the first of the properties that imposes upon these the vital power.

Modified in proportion to the nature and primitive disposition of the tissues, it impresses upon all the organs a distinctive character, which, employing the expression of Bordeu, gives to each a life which is proper to it.

XVII. It appears, that, in place of considering tonicity as a common property, as a modification of motility, I consider it as the principal lever of living nature, as the primitive form, thrown into action by the vital power.

Nervous sensibility, and muscular irritability, on the contrary, are merely characteristic properties of perfection, properties which I now represent as exerting their influence under tonicity.

XVIII. The tonic force is common to vegetables and animals; whilst nervous sensibility, and muscular irritability, are properties which are only developed, in proportion as the organ is completed. Nature has not rendered them necessary like tonicity to the existence of all organic bodies: Whence I infer, that all the other organs invest their properties, and exercise their functions, under the influence of the tonic power. [In other words, all the constituent tissues of organization, whether animal or vegetable, are endowed with the power of tonicity, and regulated by it.]

XIX. Tonicity [which may therefore be denominated the force of cohesion, the molecular power] (see also p. 156.) ought to be considered in regard to man, and animals that approach man in their structure, as being distributed among three principal systems, the capillary, the nervous, and the muscular.

These three systems, in fact, merit so much the more attention, in proportion to the disposition impressed upon them by the tonic force; since from the part devolved upon each, depends that equilibrium upon which health is maintained.

The tonic force of the capillary nerves, and muscular system, supports, in all the organs, the respective harmony of molecular cohesions, or the balance of those reciprocal forces which constitute the degree of tension, or reaction, necessary to the free exercise of their functions.

XX. Tonicity being an essential and principal condition of the normal state of all the tissues, it is of the highest importance, in properly appreciating their results, whether they be considered in each system, when the efficient condition of its equilibrium has been changed, without disturbing health, or we merely study the effects which may result from thence to the idiosyncrasy or physiologic habit of each individual; or, in fine, confine our observations to those modifications which the morbid state may be found to undergo; whence it may be sufficiently comprehended, that, in order to judge of the shades of distinction, which the numerous pathological impairments may offer, a just notion must first be formed of the dispositions of the individual before the attack of the disease.

XXI. In place of submitting the study of medicine to precepts too limited, susceptible of presenting (liable to present) diseases under an appear-

ance of similitude, capable of leading into error, tonicity, when considered as the regulating force of capillary, nervous, and muscular action; *it* may offer to the numerous phenomena of animal life, studied in health and in disease, a base sufficiently extended to allow of their explanation; of our sitting in judgment upon them, and comparing together the medical doctrines taught at the present day, and to devise from that source, inductions useful to the etiology and treatment of diseases.

My object being to sketch out the principal lines of resemblance, between the different doctrines which I mean to examine, and to endeavour to discover in their relations a foundation for those views which I offer; before developing them at a greater length, I have thought proper previously to bring forward here a succinct view of these doctrines."—P. 9–13.

"Insanity! stark insanity!" our younger readers may exclaim; but we can assure them that they are wrong. There is verbosity here, and a woful lack of distinct meaning, but no insanity. We can tell them, that both in our editorial and private capacities, we are inundated with writers of this description; with men who mistake barren generalities for the spirit of philosophy; and who fancy that an old word employed in a new sense, is a new idea. Such persons go on mercilessly, to ring changes on the most commonplace notions, in this way, and become angry and insolent when they are denied the praise of originality and invention. On the whole, we do not think M. Michu much worse than many others in this respect; and, keep him at a due distance from his everlasting tonicity, you find his sketches graphic, and his views, for the most part, accurate. It is but fair, however, to warn our readers, that his account of the whole doctrines of antiquity is comprised in twenty-eight pages, so none of them need be at the trouble to read or purchase the book on this account, which, from its title, they might otherwise have been led to do.

The author's intention is to deduce all that is true in theory and practice from his favourite power, tonicity, and to reject, as untrue, whatever cannot be made to quadrate with that principle, which, after all, he has nowhere defined with precision. The irritation of Broussais he rejects, as presenting no exact ideas; as being merely a relative term; and, in correct language, to be distinguished from excitation. He rejects also the modern Italian theory of *Contro-stimuli*, so lately brought forward by Rasori and Tommasini. He characterizes it, in substance, thus.

"The theory of *Controstimuli* is merely the theory of Brown reversed, which, in this particular, has suffered the fate of all other decayed theories, to be most sharply attacked by those who were once its most zealous supporters. Disgusted with the fatal consequences induced by giving credit to the asthenic theory of Brown, during the great epidemic of Genoa, Rasori became determined to abdicate the theory he had hitherto maintained; the contrary of which, it was inferred, could alone be true. But, in the execution of this design, says M. Michu, he only passed from one extreme to another. He pronounced all the *asthenic* maladies of the Brownonian school to be actively sthenic, or originating from an excess of excitability; and departing from this point, he and his school have considered all remedies which have appeared to them to act advantageously in asthenic diseases, as owing that property to an original power of diminishing the inherent excitability of the fibre, and of weakening the stimulus or principle which throws them into action: hence are derived the terms, *controstimulus*, and, *controstimulans*.

Tommasini diverges from this theory merely in dividing (like Gaubius), diseases into instrumental and vital; but these maladies themselves are, nevertheless, all hypersthenic. Founded on the same erroneous generalization with the Brownonian theory, this doctrine must, of course, be liable to the same, if not stronger, objections. Its retainers love to discourse of the pathologic changes of disease, and the obscure train of events, intervening between the exciting cause and symptoms of each, denominated their proximate cause. They dwell with delight on the controversies of the still infant science of materia medica; and those still more arbitrary discussions which are taught in this country under the names of semeiotics and therapeutics. But in following this course, they have classed together all the substances which they

found any how useful in removing those morbid states ascribed by them to hypersthenic diathesis, but have thereby yoked together many remedies of the most hostile and discordant nature. Milk, gentian, gum, simarouba, bloodletting, drastic purgatives, stramonium, belladona, tartar emetic, iron, cantharides, nux vomica, are all huddled together. Indeed, according to the theory of *controstimulus*, the only true stimulants are caloric, the electric fluid, phosphorus, ether, ammoniacum, opium, milk, camphor, wine, alcohol, carbonic acid, aromatics; and, according to M. Rolando, light, the nervous fluid, the blood."

The above may serve as a specimen of the style of illustration and criticism adopted by our author, when speaking of the theories of others; but we must now leave him to our readers, with the supposition that they are warned not to expect the same clearness and precision, when he condescends on the explanation of his own doctrines; these all are intricately metaphysical, abstract, and divinely mystical. We know nothing of his history; but, judging from his appearance here, we would freely hazard a conjecture, that M. Michu is a pupil of the school of Montpellier.

The Effect of Compression on Poisoned Wounds *.

In a paper lately read to the Academy of Medicine, Dr Brouillard stated the fact, that poisons, even of the most active class, do not produce death, until they have been absorbed into the system; and hence he argues, that by preventing absorption, you obviate the mischief. Dr Barry applied the cupping-glass to poisoned wounds, and by hindering the circulation of the poison, prevented those phenomena from taking place, that would necessarily occur, if absorption had been suffered to go on. Dr Brouillard was induced to make some experiments, which were attended with complete success. He laid bare a portion of the cellular substance of a rabbit's thigh, and introduced therein three grains of strychnia; he then tied a ligature above the wounded part. Twenty-one minutes elapsed before the animal appeared to be affected by the poison; but, at the end of that time, it was convulsed, and sent forth strong cries. Dr Brouillard strongly compressed the wound with his hand, and the symptoms ceased; nor did they return for twenty-five minutes, during which the compression was continued. In six minutes after the ligature and hand were removed, the convulsions were renewed. The Doctor then alternately applied and removed the ligature, and each operation was attended exactly with the same results as before, respectively. The experiment was repeated in five instances with strychnia, and in two with prussic acid; and, in one case, the Doctor, by means of compression on the wound, kept the animal alive for nine hours. He lastly inserted a portion of the above poisons in animals of the same species, and in all cases the consequence was the immediate extinction of life.

Tumours in the Cerebellum. Bertin and Piaud.

A boy, ten years of age, of a very scrofulous habit of body, had been complaining for some time of a pain in the posterior and inferior part of the right side of the head; a disease of the hip-joint, and the pain in the head, disappeared, but the boy continued weak, and was liable to spontaneous vomiting. He remained thin and pale; the eyes became less movable than natural; the pupils a little dilated, and slow in contracting; the sight weak; the intellectual faculties unimpaired; he felt no pain; after some time the vomiting returned, accompanied with general convulsions; the sight became very weak, with slight strabismus; occasionally he saw objects double; he possessed the perfect use of his limbs, but was dull and unwilling to move. 25*th April*, Left side of the face convulsed for a short time, next day vomiting and general convulsions for a short time; 27*th*, General convulsions, death.

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* Lancet, November 4. 1826.

Dissection.—Thirty-six hours after death. Head, cortical substance of the brain very thin; brain soft, more especially the left lobe; the lateral ventricles contained about twelve ounces of a limpid serosity, the left more than the right. On the external surface of the right lobe of the cerebellum, three remarkable eminences were observed: these were formed by three tumours, situated in the substance of the cerebellum, which was softened around them, and reduced to a kind of bouillie, or pap. These three tumours, when insulated, were unequal on their surface, of a rounded form, and each of the size of a nut. They were composed of a white, firm, homogeneous substance, perfectly resembling tuberculous matter in its unsoftened state; the three weighed an ounce; the left lobe of the cerebellum healthy. Abdomen, tubercles and inflammation of the peritoneum; slight redness, and thickening of the mucous membrane of the stomach.—*Bertin.*

Tumour compressing the Cerebellum and Spinal Marrow.

A soldier, twenty-four years of age, had been affected for three or four months with an almost constant pain in the head, more particularly towards the occiput. This was relieved by local bleeding, &c. but returned on the 15th of March 1825. On the 4th of June, the pain was acute, constant, fixed in the occipital region, with nausea, anorexia, vomiting and constipation, a little relieved by bleeding and purgatives.—*15th July*, Pain still continues; the limbs can now hardly sustain the weight of the body.—*24th July*, Feeling of weight over the orbits; dimness of sight; dilatation and almost immobility of the pupils. In the following month, difficulty in moving the tongue and in speaking; sight very dim. The symptoms gradually increased; in a short time he could no longer stand erect; the articulation very imperfect; great difficulty in swallowing; almost total loss of power in the superior extremities: sight gone; insensibility in the integuments of the face; hearing very obtuse; taste and smell alone active; somnolency; torpor; deglutition at last became impossible, but the appetite remained good. He died on the 2d of September.

Dissection.—About six ounces of clear serum in the lateral ventricles; optic nerves at their decussation thin and flattened. In the left inferior occipital foss was situated a tumour of the size of a hen's egg, formed of a soft pultaceous matter, inclosed in a very thin capsule. It raised up and flattened the left lobe of the cerebellum, and pressed on the posterior surface of the spinal marrow, compressing the origins of the 5, 7 and 8 nerves, and interfering also with the 9 in its passage through the condyloid foramen.—*Piaud, Ephemerides, Tome i. Avril* 1826.

These two cases present a considerable analogy. The principal difference consists in the existence of paralysis in one of the patients, and convulsions in the other. These convulsions may be referred to the inflammation which surrounded the tubercles in Mr Bertin's case. These convulsions, however, which appeared only in the last days, do not prove that the cerebellum is an organ of voluntary motions, according to Rolando, nor even their regulator, as Flourens thinks, for the patient walked about regularly and freely during the long period of his disease. Nor is the paralysis, in the second case, more favourable to the opinions of these authors; for if it had depended on the compression of the left lobe of the cerebellum, it would have been confined to one side of the body. It was evidently owing to the compression of the spinal marrow by the tumours.

Ossification of the Retina.

Jean Baptiste Pelletier, æt. 67, blind from his fortieth year nearly, became an inmate of the hospital at Chartres, for chronic pulmonary catarrh, to which he fell a victim on the 18th December 1824. This individual presented an emaciated or sunken condition of the eyes, which, for a long time,

attracted the attention of the author. The right eye was reduced to about the fourth of its usual volume, and had lost its original shape; the extent of its cornea was but half a line in all its diameters, it was thickened and deprived of its transparency. The sclerotica was placid and flattened in four different directions, forming as many surfaces, which could be distinguished into superior, inferior, exterior, and internal. These surfaces were almost flat; they corresponded to the attachments of the straight muscles, and were separated by a deep groove. The internal surface of this membrane was defined by four prominent margins corresponding to the grooves, which completely separated the interior of the eye into four apartments; these were empty, as the humours disappeared spontaneously after a violent attack of inflammation, with which this organ had been seized, in consequence of a blow from a stick about fifty-seven years previously. The iris having contracted an adhesion with the posterior surface of the cornea, its structure could be scarcely distinguished. The rest appeared confused, but presented nothing remarkable.

The left eye was reduced to half its natural size, which diminution took place at the expence of the antero-posterior diameter of the organ. The sclerotica was placid; the cornea was opaque, and resembled much in its colour the white portion of the root of the nail; it was flattened anteriorly, and much thicker and larger than in the natural state; the points where its circumference united with the sclerotica were puffy and much thicker than any other portion of its whole extent. At the anterior and external part of the globe of the eye, a deep cicatrix, of about three lines and a-half in length, could be seen, which involved a portion of the sclerotica and cornea, taking a direction from within outwards, and from below upwards. This cicatrix was the sequela of a considerable wound, produced about forty years previously, from the eye coming in contact with a sharp edged stone, in consequence of the individual having fallen from the top of a coach.

A circular incision of the eye permitted the escape of a little yellowish fluid; there was not a vestige of the crystalline lens or vitreous humour to be observed; doubtless these organs escaped through the breach made in the transparent cornea, or tunica sclerotica. The anterior surface of the iris adhered throughout to the posterior one of the cornea; and a portion of it protruded through the wound just mentioned, and contracted an adhesion with its edges. The great circumference of the iris was not detached from the ciliary ligament. Concentrick to the other membranes in the bottom of the eye, an osseous body was seen, which, at some points, equalled the sclerotica in thickness, in other parts it was thicker; it presented a double surface, the one external, the other internal. The external one, which had the appearance, colour, and consistence of the parietal bones deprived of their periosteum, was convex and covered by the choroid coat, but it did not adhere to it. The internal surface was concave, smooth, polished, of a shining whiteness, and covered in half its extent by a whitish shining membrane, of a fibrous structure. When this membrane was dried and examined in a clear light, it was glossy, transparent, and, from its colour, resembled much *a lamina* of the crystalline lens, which might have suffered a certain degree of desiccation. Underneath this membrane, the bony surface was uneven and rough. This surface, deprived of its membrane, was thinner than that which was found naked. According to M. Mannoury, this osseous body was nothing else than the retina completely ossified at certain points, and partially in the remaining portions. At a particular point of the circumference of this osseous membrane, there was an irregular aperture with ragged edges; this opening did not afford a passage for any object, and seemed evidently the result of defective ossification. The author thinks it probable, that the hand of time would effect such a change in that fibrous portion spoken of, and which, in its circumference, blended itself with the osseous membrane, as to convert it also into bone. This socket, which seemed to be constructed of successive scales, constituted two-thirds of the posterior part of the retina, and exhibited anteriorly a circular border, which was rough, uneven, sharp at some points, and about a line in thickness in other parts. It was perfo-

rated nea r its centre by a round opening of about two lines and a half in circumference, with smooth edges. Through this perforation a whitish pulpy nerve passed, which filled up the opening, without adhering to its margins. This nerve made a projection of about half a line on the internal surface of the ossified membrane, where it was superficial, and continued its course through the choroid and sclerotic coats with the optic nerve, of which it was manifestly the continuation. The optic nerves were not examined beyond their entrance into the sclerotic.

On Cyanogenous Baths, and the Purgative Cyanogenous Syrup of Dr Pierro Paganini. (Journal Universelle des Sciences Medicales. July 1826.)

In a number of acute, and even of inflammatory, diseases, irritation of the nervous system, and of the spinal marrow, exerts a considerable influence, and deserves particular attention. Several chronic affections of the alimentary tube, of the liver, the bladder, &c. are merely examples of nervous inflammation. Pain is one of their most prominent symptoms. Bloodletting only procures a transient relief; and yet, even at an advanced stage of the disease, there is reason to believe that no alteration of the structure of the tissues has yet taken place. Opium and acupuncture are often found effectual in such diseases; but Dr Paganini prefers to either the new remedial means just indicated in the title. His bath is composed simply of water, into which he puts, in ordinary cases, four ounces of water distilled from cherry laurel, or bitter almonds. He augments or diminishes this quantity according to the age and susceptibility of the individual, the severity of the disease, and so forth. To render it stupefying, he adds to it hyoscyamus, conium, and especially stramonium. Sometimes he adds four ounces of the extract of these plants, sometimes four pounds of their decoction. At other times he prefers their active alkaline principles (*hyoscyamia*, *conine*, and *daturia*) if the indications appear to demand them.

The cyanogenous purgative syrup, he considers specially adapted to chronic inflammations of the intestinal tube. It consists in adding, in the cold, to three ounces of bitter almond emulsion, six drops of distilled cyanogenous water, in a pound of syrup prepared from six drachms of senna. The ordinary dose is two ounces a day.

The same physician relates cases of paraplegia, *gastro-entero-peritonititis*, which he calls nervous, angiotitis simulating aneurism, dolor crucians faciei, &c., in which the combination of these means seemed to be followed with success. As, however, they were not exhibited alone, we merely notice their having been applied, without entering into the details of the cases.

A Case of Renal Enlargement. By Dr Kinglake.

(For the Editors of the Edinburgh Journal of Medical Science.)

An opportunity has been very recently afforded me, by examining the body of a person who had died of what was supposed an hepatic disease, of thirty years' duration, of seeing an enlarged kidney of almost unparalleled dimensions. The real weight was full nine pounds; but the apparent bulk, arising from the loose and extended texture of its substance, indicated that it was still heavier.

The pelvis of this morbid kidney was visible, and its surface had retained its smooth, organized appearance. The enormous size which it had attained, was made up of a long series of coagulable effusions, laminated, condensed, and organized, in a manner that imparted to the general mass vascular connection and vital support. Without any delicate form or arrangement, the superadded substance, that had been slowly furnished by a process of accretion or growth of new parts, had the aspect of condensed, cellular and adipose texture, in which were follicular or encysted cavities, promiscuously filled with a puriform fluid, and with osseous and caseous matter.

The confusion of structure seemed to involve its own decomposition, occasioned by inflammatory actions, that had the effect of producing suppurative and ulcerative destruction. But the pabulum, which originated and carried on the morbid growth, was still supplied, and went to sustain and extend the diseased enlargement that had occurred. Pus, forming in remote parts of the tumour, traced itself a communication within the pelvis of the kidney, and found admission into the adjoining ureter, which remained pervious, and occasionally transmitted purulent and bloody fluids to the bladder, from whence they were voided in the urinary discharges.

No secretion of urine was likely to be effected by the diseased kidney; but the other renal organ continuing sound, probably performed the office of both, inasmuch as the quantity secreted was nearly that of the natural standard. No dropsical accumulations, either in the visceral or cellular cavities, occurred, so that it is reasonable to suppose that the superfluous water of the circulating fluids, usually supplying, for the most part, the urinary secretion, was regularly abstracted from the system.

The patient was about seventy years of age, had been a medical practitioner, and, though he had, for a very long period, circumstantially and feelingly meditated on his own case, he was uniformly confident that the liver was the seat of the palpable protuberance with which the abdomen was encumbered and oppressed. He suffered no acute pain, and the uneasy sensations that were experienced, were referred to the hepatic region, and never to that of the kidneys. The extreme bulk of the enlarged kidney had necessarily intruded itself into the anterior part of the abdomen, and was resting on the upper surface of the liver. The liver itself appeared to be rather diminished in its size, but did not exhibit an unhealthy aspect.

This monstrous superaddition of new parts on the diseased kidney, which seemed to serve, as it were, as a nucleus for the progressive accretion that was going on for nearly thirty years, must have been the work of inflammation, which is the active power with which nature destroys and generates animal structure, but which cannot assume any regular or effective arrangement, unless instituted and directed by those formative principles that are inherent in matter, and are unfolded and established agreeably to specific laws of organic life, or of primordial construction and utility. The deviations from natural correctness in animal structure, are instances of disease that chiefly interest, by marking the conditions of health, and how essential they are even to life itself.

If this formidable disease be attributable to inflammatory mischief, it is clear that, at an early period of its formation only, could it have been repressed and subdued. It evinces the importance of not neglecting morbid feelings at the commencement,—of not enduring any sense of ailment that may and ought to be seasonably remedied. Visceral affections, of trifling and curable origin, are apt by delay to proceed to afflicting and irremediable disorganizations.

It is a fact worthy the notice of the physiologist, that the renal structure will admit of deep and spoliating disease, without producing any corresponding degree of suffering. As on other occasions of double or extended organic structures, as the eyes, ears, nostrils, lungs, liver, testes, and ovaria, the fabric of either kidney may be so broken down and swept away by suppurative inflammation, as scarcely to leave a vestige of the organ remaining; and if the secretion of urine be tolerably effected by the duplicate viscus, it often happens that but very little or no inconvenience is experienced. Not only may it be gradually diminished, and ultimately annihilated, by a process of morbid working,—but, on the contrary, it may, as in the instance under consideration, attain, by slow augmentation, to nine times its natural size, without (during a series of thirty years) occasioning any proportionate severity of pain.

The patient who was the subject of the recited case, was able to lie on either side as well as on the back, and was, until within a short time of his decease, capable of occasionally assuming either the standing or sitting posi-

tion; and it is affirmed by his medical attendant, that the immediate cause of his death, as demonstrated by examination, was intestinal gangrene, and not any hurtful pressure or other injury occasioned by the enormous bulk and protruded station of the diseased kidney.

TAUNTON, *June* 7. 1826.

PRACTICE OF SURGERY.

YELLOW JOURNAL.—PUFF INDIRECT.

THE November number of the London Medical and Physical Journal was announced in the Morning Chronicle of 27th October last, by a long advertisement, concluding with a remark, that the two surgical cases referred to Mr Charles Bell and Mr John Shaw, in *our* last number, were cases "which, in justice, the northern Editor ought to have acknowledged." We do *acknowledge*, (what we suppose the publisher means) that we neglected to mark upon them the words "Medical and Physical Journal;" and sorry we be, that Mr Souter has taken so small a matter so much to heart, and beg leave very sincerely to assure him, that we will give him a *lift* some day or other by way of compensation, that will make that very heart of his sing for joy within him. We wrote his "proprietors" privately to the same effect on the 29th of October last, on receiving rather a bristly epistle from their collective wisdoms. We repeat it, we were as sorry as if we had trod unintentionally upon their toes. But on opening the "Yellow Book" for the month, what a yelping, and fuss, and storm in a coffee-pot, presented itself! No less than PLAGIARISM! a regular hue and cry after a "Literary theft,"—as Johnson hath it, "an adoption of the thoughts and words of another." Now, we ask, Who is that other? Is it Mr John Souter, or Dr Roderick Macleod? or, are not rather the thoughts and words, simple and all as they are, the thoughts and words of Mr Charles Bell and Mr John Shaw, whose names stand attached in our journal to their respective labours? We would like to hear how the editor of the "Yellow" will get out of this scrape, in his court of conscience, of having accused us of a crime which it was impossible we could commit. This is all the Lord Chancellor we will appeal to.

But he is not content with noisy reclamation. The EDITOR is too knowing for that. An encomium of the highest water is superadded by way of solace to his own injured "Yellow Book," which contains, as he avers, "much good matter;" and, "Communications of some of the most distinguished practitioners in the metropolis." Our Edinburgh Journal, again, "has its *original* department almost entirely made up of papers from other works:" and this he writes "out of no bad feeling;"—towards his own interests, at least, some will say! We had no bad feeling either,—no interested object to answer, by forgetting to name his "Yellow Book;" and we see not why he should thus attempt to do us a mischief by what is a gross misrepresentation. There seems here not a little of the "*pluma levior gratia, plumbeæ iræ*," of the old poet. Without speaking of the present number, of which we cannot but be vain, our "Original Department" previously contains exactly Seventy-eight papers, of which the account stands thus: Sixty-two Original papers, twelve Translations, and four taken from other works. This is our account; but how will it sound when we state, that, under the same head of "Original Papers," in the very number of the Medical and Physical which breathes forth our condemnation, for inserting under it "papers from other works;" there is placed a case of aneurism, treated by Dupuytren of the Hotel Dieu, and acknowledged by this stern censor of his neighbours to be extracted forth of the "Repertoire d'Anatomie et de Physiologie, No. II?"

Nay, we can scarcely open a number of his "New Series," without meeting one or more examples of the same kind; with which practice, however, we are so far from finding fault, that we always think these extracts the best part of his publication. What is it to nine-tenths of his readers, or ours, that a good paper occurs in a French, Italian, German, Norwegian, Dutch or Latin periodical, (for though *he* perhaps may not, we have already given translations and notices from all these languages)? What is it even to a still larger proportion of the medical world, whether something worthy of being known, exists in the numerous journals of America, in the transactions of our own learned societies, domestic and provincial, or even, we may whisper, in his own "distinguished" pages, when they can never have an opportunity of perusing them in their nascent state, or would not choose to do so, till they are licked into shape by the labour of some editor? He must know less about the libraries of medical men, than we think he does, if, speaking generally, he expects to meet any part of the learned lumber we have mentioned there. It was to supply this desideratum that we embarked, at a great expence of time, and means, upon our present undertaking: that we engaged, and still retain, the co-operation of the most celebrated medical writers of the present day: professors, lecturers, hospital physicians and surgeons, or otherwise distinguished authors,—nor will we be driven out of this track in which we have been so generously encouraged to proceed, by the patronage of the profession, either by the puffs of a bookseller, or the *innuendos* of his editor. We have too much respect for ourselves, and for that public before which we have thus been reluctantly dragged, to comply so tamely with a charge of plagiarism, of which it was impossible we could be guilty; and though we hold it egotistic and humbling, to mix ourselves with the petty jarring around us, he who attacks our moral character shall be taught that we walk not forth without means of defence. In short, our brother editor will find it useful to bear himself somewhat more charitably towards his contemporaries. We have hitherto been speaking on the supposition that, in his attack, he *principally* meditated a little seasonable puffing for the New Series; but how would he look up, had *we* entitled the present notice, as well we might, "*Malicious and Designing Falsehoods of the Editor of the Medical and Physical Journal.*" He knew that omissions such as ours are daily made in the best conducted journals in Europe; and might have known, that they had been made with regard to ourselves*. He had our written apology for the omission in his pocket before the day of publication, and yet he chuses to step forward, accusing us of a theft, of which he *could* not believe us guilty, and of bad faith towards the public,—a charge we have proved to be groundless in itself, and sinister in its purpose. If ignorance of the mutual forbearance necessary in the intercourse of life, and especially in the management of the press, gave rise to his clamours, we forgive him, in the hopes of meeting with a little more neighbourly civility in future; and, at all events, if he be not too old to learn, we trust he will not, after this admonition, neglect to take lessons from some "slender clerk of the South" on the subject of the English language, doing justice, in particular, to the word *plagiarism*, which he has, in this instance, so grossly abused.

Lithotomy. Hemorrhage on the sixth day; death.

On the 14th, a marine, forty years of age, was admitted into the hospital, with stone in the bladder, which he said had existed for two years. Attempts had been made to break it, according to the plan of Civiale, but he could not suffer the introduction of the instrument. On his admission, October 11. 1825, he was stout, and had the appearance of good health. He suffered frequently from retention of urine, from severe pains in the bladder, and passed

* See, amongst several others, the *Journ. Univ. des Sciences Medicales, Juil.* 1826; pp. 123—127.

often pus and blood with his urine, especially after exercise. Mr Lallemand performed the operation with the bistoury. The stone, which was not larger than a nut, was easily extracted. A considerable flow of blood took place, but not per saltum, and it continued only for a short time. Matters went on well till the 19th, when, in consequence of constipation, a lavement was ordered. At 10 P. M. violent shivering for half an hour; afterwards slight discharge of blood. 20th, 7 A. M. long continued shiverings, effort to go to stool, discharge of a very great quantity of blood, by jet, from the internal lip of the wound; cold applications to the thighs and abdomen, with cessation of the bleeding; an hour afterwards hemorrhage returned; introduction of a sound into the bladder; anterior angle of the wound cauterized deeply with nitrate of silver; during the day collapse of the features, pulse very small, hiccup. 21st, Hiccup continues, tongue red and dry, skin warm, pulse strong and quick, belly soft, venæsectio ad uncias sex, bad night. 22d, Hiccup more violent, conjunctiva yellow, abdomen soft and indolent, fresh discharge of blood, dressings covered with clots, a blister in the evening to the abdomen. 24th, No fresh hemorrhage, slight delirium, respiration difficult, dull sound on the lower and lateral part of the right side. 25th, Colour yellow, abdomen distended, constipation for five days; sulph. sodæ et tart. emetic.; several stools during the day. 27th, Increase of symptoms. 28th, Died.

Dissection.—Head; slight serous effusion over the surface of the arachnoid, opaline effusion resembling pus over the pia mater, towards the posterior part of the superior longitudinal sinus.

Thorax; a few spoonfuls of serum in the pericardium; between the diaphragm and the base of the right lung, about half an ounce of purulent matter; diaphragm very red, much injected, and easily lacerable; on the surface of the inferior lobe some flakes of lymph; very numerous infiltrations of purulent matter, from the size of a pea to that of a nut, in the substance of both lungs; more especially towards the base of the right; on making an incision through these little tumours, and pressing them, the pus flowed in drops; round them the surrounding substance very red.

Abdomen; slight flaky exudation between the liver and diaphragm; soft flakes on the surface of the spleen; several red patches in the stomach; mucous membrane at the commencement, and in the descending portion of the colon thickened, red, and injected; right kidney destroyed, in part, by numerous little phlegmons, mostly terminated in suppuration; in some the pus merely infiltrated, but in the greater part collected into little abscesses; left kidneys nearly in the same state.

Pelvis; Numerous little abscesses in the erectile tissue of the penis,—internal coat of the bladder thick, and of deep red colour,—on its lower part two little ulcerations of from four to five lines in size, with loose edges, on raising which a sound passes into the ureters, which are very large, thin, and easily torn. Behind the ureters, in the lower part of the bladder, a kind of little pouch of a deep red colour; this pouch probably contained the stone; the whole surface of the wound of a reddish brown colour. The transverse artery of the perineum untouched, and separated from the incision by a thickness of four or five lines of muscle and cellular substance. Some of its inferior branches had, however, been divided, and from them it is probable that the hemorrhage had taken place. Mons. Lallemand considers the violent shivering as the precursor of the active hemorrhage. The inflammation of the lungs and other organs, he is inclined to attribute to the prolonged application of cold to the surface. A bleeding was had recourse to on the day after the hemorrhage was first observed. He asks, Would the patient have been saved, if the bleedings had been repeated, in spite of the weakness of the pulse? he thinks not: but we are not inclined to view the case in the same light with Lallemand. The bowels had been allowed to become very constipated, and the violent shiverings, on the 19th, shewed that internal inflammation was taking place. Had energetic measures been then pursued, the result, we conceive, would have been different. The case is interesting, as it shews how little effect the loss

of blood from the wound had in controlling the inflammatory processes established in the different organs of the body. Tho great object in inflammatory diseases, is to produce a decided effect upon the system, at the very commencement of the disease: it was neglected in this case, and we see the result.

PHYSIOLOGY.

C. F. Bellingeri's Researches upon the Spinal Marrow. (From the Repertorio Medico-Chirurgico di Torino, Juli 1825.)

The former treatise of Bellingeri upon the relations of the nerves, which was originally read before the Academy of Sciences at Turin, is well known. The present results of his researches may be considered as its continuation, and were entirely directed according to the suggestion of Scarpa. It was shewn,

1*st*, That the spinal marrow consists of six columns, two before, two behind, and two in the middle at the sides. 2*d*, That this division takes place through the middle posterior and lateral bifurcations, and through anterior lateral fissures. 3*d*, That the origin of the anterior and posterior roots of the spinal nerves is threefold.

M. Bellingeri has proceeded with his considerations and researches, and has been led by them at present to the following conclusions.

1*st*, Only the anterior, but never the posterior, roots of the spinal nerves produce feeling and pain.

2*d*, The posterior roots of the same nerves only produce extension.

3*d*, The anterior roots of the spinal nerves only produce flexion.

4*th*, Hence there arises a relation of the anterior and posterior roots of the spinal nerves.

5*th*, The posterior layers of the spinal marrow produce extension alone.

6*th*, The anterior layers of the same produce flexion alone.

7*th*, The posterior layers operate, through the fibres of the nerves arising out of themselves, the paralysis of the sphincter muscle of the bladder, and the constriction of the anus.

8*th*, The anterior layers contract the sphincter muscle of the bladder, and paralyze that of the anus.

9*th*, There is, therefore, a true nervous antagonism of the muscles of the bladder and rectum.

10*th*, The anterior and posterior bundles of the spinal marrow serve merely for flexion, and not in the least for sensation.

11*th*, The lateral bundles are not subservient to sensation, but they exercise an influence over the power of the voluntary motions, and particularly upon that of the urinary bladder, and of the intestinal canal.

12*th*, The white matter of the spinal marrow is merely subservient to motion, and not to sensation.

13*th*, The grey matter serves merely for sensation, and not in the least for motion.

14*th*, There is necessary, in order that the sense of feeling may take place, merely an approach or confluence, but not a continuous connection of the grey matter.

15*th*, Inflammation of the grey matter developes and expands the sense of feeling.

16*th*, Feeling, in fine, may perhaps be effected by the circulation of a peculiar fluid.

From all these researches, M. Bellingeri deduces the following pathological consequences.

1*st*, If, in lamed persons, the power of motion has been impaired, then the

disease has attacked the white matter; and if loss of feeling only, the grey matter; but both if the palsy is complete; that is to say, if it is attended with a loss of both sense and motion.

2*d*, In partial paralysis, if flexion only is impossible; the seat of the affection is in the anterior bundles and roots of the spinal nerves; but if extension is impeded, then it is placed in the posterior bundles and roots.

3*d*, If, in place of paralysis, there is present a morbid affection with the spine and members contracted during flection, then the anterior columns are affected, but the posterior, if the contraction takes place during the act of extension.

4*th*, If impossibility of retaining urine occurs from paralysis, the cause is to be found in the anterior bundles, and in the posterior, if suppression of urine be present from the same cause.

If the affection is of a spasmodic nature, the retention and suppression of urine proceed from the anterior columns and bundles, and the loss of power to retain it on the posterior.

Velocity of the Pulse in Warm Climates. By Mr Roulin, from F. Magendie's Journal de Phys. Experimentale. January 1826.

Mr Roulin, to whose observations on the frequent occurrence of goitre in South America, and on the presence of iodin in the waters of that country, we have had occasion to refer in our preceding numbers, has published a very useful paper on the diversities of the velocity of the pulse in that interesting region. It is to be regretted, that his observations were not extended to a greater number of individuals; the general result, however, in the main, confirms what had formerly been advanced by the numerous writers of our own country, who have spent a considerable portion of their lives in the exercise of the medical profession between the Tropics. It seems to be established, that the human pulse in those climates does not exceed by more than a beat or two the usual celerity which it exhibits in the temperate regions of Europe; nature having left little to chance in the regulation of a function so immediately and imperatively necessary to life as the circulation of the blood and its cause, the pulsations of the heart and arteries. The following is an abstract of the more interesting additions to our knowledge with which we are here furnished by the industry of Dr Roulin. These observations were made whilst passing from the Table Land of Santa Fé de Bogota to the Plains of Saint Martin, upon three persons who had resided six months upon the former, and who being well accustomed to travelling, ran less chance of being materially affected from that cause.

A Parisian, M. B., aged twenty three years, six feet one-half inches high, scrofulous habit. Mr Ro, a Peruvian of Ariguipa, aged twenty-six, five feet five inches high, of a bilious temperament, had lived several years in Europe. Mr de Rennes of Brittanny, aged twenty-seven, five feet five inches high, sanguine temperament.

Observation First.—Santa Fé de Bogota, 13th January 1823, 2865 yards above the level of the sea, at eight o'clock in the morning, thermometer at 58° Fahr.; the pulse of the Parisian was 67, of the Peruvian 71, of the Breton 69.

But this was in winter. The following observations were made upon a Parisian lady, her son of seven years, and a young domestic of thirteen years, born upon the plateau, 23d of September, thermometer at 66° Fahr. At six in the morning, the servant's pulse was 78 in the horizontal, and 85 in the erect posture; that of the lady was 64 in the horizontal, and 82 in the erect posture; that of the child was 86 in the horizontal, and 101 in the erect posture. The following table of the mean number of pulsations at Santa-Fé and Guaduas, the atmospheric pressures of the former of which is to the latter as 7 : 9, will exhibit the most essential particulars:—

Names.	Vertical Position. Mean Number of Pulsations at Santa-Fe.	Vertical Position. Mean Number of Pulsations at Guaduas.	Vertical Position. Proximate Ratio.	Horizontal Position. Mean Number of Pulsations at Santa-Fe.	Horizontal Position. Mean Number of Pulsations at Guaduas.	Horizontal Position. Proximate Ratio.
Lady, . .	96	86	$9\frac{1}{2} : 8\frac{1}{2}$	77	64	$7\frac{7}{10} : 6\frac{4}{10}$
Domestic, .	86	81	$8\frac{1}{2} : 8$	75	71	$7\frac{1}{2} : 7\frac{1}{10}$
Child, . .	100	102	$10 : 10\frac{1}{5}$	89	87	$9 : 8\frac{4}{5}$

In the valley of the Magdalena at Maraquito, 388 yards above the level of the sea, when the thermometer was at 76°, in the month of September 1824, the pulse of the same lady was 68 in the horizontal posture, and 80 when erect. In fine, Mr Roulin observes, "Contrary to my expectation, I found at first that the velocity of the pulse was almost the same as in Paris, where I had established that the velocity of the pulse in the different ages is much greater than what we find mentioned in several treatises of Physiology. It will be seen by the above observations, that the differences of atmospheric pressure has less influence upon the circulation than might have been supposed."

Singular Case of Spontaneous Depilation. Communicated by W. J. Carson, Esq. To the Editor of the Edinburgh Journal of Medical Science.

Sir,

"When upon a visit in the south, during last September, I met with the following case, which appeared to me so very remarkable, as perhaps to merit a place in your highly respectable Journal. With a view to this, and that an incident so unusual might not be entirely lost to the profession, I made a point of obtaining the most accurate information, both from the individual to whom it occurred, and by the minutest personal inspection. The result you have in the following pages, as extended in my journal from notes taken on the spot.

Mr J. H. in B——, county of Cumberland, unmarried, ætat. 35. The patient is a strong built, muscular man, fully six feet in height, free from either local or constitutional disease, excepting that which I am about to describe. Some years ago, had one or two slight attacks of pleuritis, which were readily subdued by the common mode of treatment, without leaving any bad effects; and, with the exception of those, has always enjoyed an excellent state of health, and, up to the present time, been actively employed in agricultural pursuits.

He is so completely denuded of hair, that, after the minutest search, I was unable to find even the vestige of one upon any part of his head, body, or extremities,—even the supercilia, vibriscæ, and pili auriculares, have entirely disappeared, whilst his skin is of a healthy colour, and free from the smallest perceptible irregularity of surface. When examined upon the circumstances connected with the first appearance of the disease, he stated, that the hair of his head was always of a lightish cast; his beard, whiskers, &c. reddish, and that every where it was particularly plentiful and strong. This I can myself confirm, recollecting to have seen him about a year ago, in his usual good state of health, when, even upon the backs of his hands, it seemed to be more abundant and stronger than in most people.

States, that he observed it first when shaving, on or about the 14th of March 1826, in the appearance of a small bare spot over the buccinator muscle

of the right cheek: and that, as he continued to shave, the hair, instead of being cut smooth with the surface, for the most part came away by the roots, and in such quantity, that, after having shaved a few more times, he had not a hair left upon his face. On the same 14th of March, he went to a person in the neighbourhood for the purpose of having his hair cut. The individual whom he employed to do so, observed a small bared spot over the transverse ridge of the occiput, on the right side, which from that day forward gradually extended, till, before the middle of May, he was so totally denuded as not to have a solitary hair on any part of his frame. During the progress of the disease, he did not experience the least pain, sickness, or uneasiness, excepting what arose from the disagreeable inconvenience of the hairs falling into his victuals, &c. upon the smallest motion.

Another no less remarkable feature of the case is, that the finger-nails seem to participate of the general disease; as, though they have not actually dropped out, yet they are shrunk and withered, and appear not to receive any nourishment by their roots: at the same time they are of a whitish colour, brittle consistence, and very ragged at their extremities. This appearance did not present itself till perhaps three months after the loss of the hair; and, what is singular, only the finger-nails are thus affected, whilst those of the toes retain their natural colour and consistence.

The head perspires so freely that it is always moist, whilst there is no perceptible perspiration upon any other part. For the last three months he has worn a wig during the day, and a warm cap at night; but, whether the wig be on or off, the perspiration over the whole surface of the head is the same.

Previous to November 1825, he was accustomed to partake freely of spiritous liquors, (though by no means what is generally called a drunkard); but about that time, having taken some dislike to spirits, he all at once and entirely refrained from them: he, however, still continued to take strong ale, and perhaps even in greater quantity. In this consisted the sole difference of his regimen or way of living from what it had always been. About the month of June last, however, some one having told him that his abstinence in this respect was the cause of the hair falling away, he again began to take spirits as before,—freely, but not immoderately.

This case seems interesting in a variety of points of view, the denudation having been so complete, without being either preceded or accompanied by any other discernible disease, whether cutaneous or internal; for which reason, it would be very difficult indeed to rank it with any class hitherto described. As a consequent of fever, &c., we certainly meet with frequent instances of partial baldness on the head and other parts of the patient, but still there is a very marked difference between these and the case under consideration; because, in the former, though a considerable portion of the hair fall out, yet it is more than probable that the roots remain,—at all events, the secretive functions are not totally destroyed, as they evidently are in the peculiar instance before us. The nearest approach to it that we can find, in those medical authors who have treated on such subjects, is in the second class and fifth order of cutaneous diseases, according to the arrangement of Willan and Bateman. The latter, under the denomination of Porrigo Declavans, in the above second class, gives an explication of what to him appears to be the cause of partial baldness; but the principles there advanced are by no means applicable here, as he seems to infer that the modification of the disease there treated of, chiefly occurs in children, and that there are some remains of the roots, though the hairs have disappeared. When it supervenes as a sequel of fevers, scarlatina, &c., we may perhaps attribute it to the increased action of the vessels of the cutis, which induces a morbid enlargement of the cuticle, at the same time that the structure which secretes the hair suffers a privation of blood, and, consequently of nourishment, so long as the cutis remains in an inflammatory state, and the hair drops off;—not being adequately supplied with that proportion of fluid which is furnished by the healthy performance of the secretive functions. However, in the case under consideration, it would be very difficult to apply this principle,

by reason of the total absence of every thing like inflammatory action, either in the cutis vera or elsewhere.

Bateman's theory of an eruption of minute achores about the roots of the hair without perceptible discharge, approaches nearer in appearance to the present case than any thing we have been able to meet with. Still, how are we to account for the continuance of the disease, and the wasting of the finger-nails, whilst the toe-nails retain their usual healthy colour and consistence?

As there was no alteration of regimen, excepting the abstinence from spirits already mentioned, it becomes a question of very material import, whether, or how far, the patient's constitution, and more especially the parts concerned in secreting the hair, might thereby be influenced; and whether it can happen that a supply of spirits, after having been pretty regularly and abundantly kept up for some considerable period, should become so indispensably requisite to the right performance of the secretive functions, as, on being withheld, to entirely obstruct one of such consequence as the formation of the hair.

With the advice of a gentleman of this city, who stands high in his profession, I have prescribed a plan of treatment with a view to the removal of the disease, and, consequently, to the reproduction of the hair; but, not having received accurate information whether the course advised has been properly adhered to, I shall postpone entering into any detail regarding it just now; however, should any thing of consequence occur respecting the event of the case, it shall be punctually attended to, and accurately stated in a subsequent number of the Journal.

In the interim, should some experienced member of our profession, who is possessed of sufficient time and inclination, be disposed to enter farther upon the elucidation of a fact, which, besides being an interesting object of curiosity, involves a question of such paramount importance, considered in a physiological point of view, I shall be happy to give him every information, both as to where the individual may be found, and regarding the succeeding appearances and treatment of the disease.

Royal Infirmary, Edinburgh,
5th December 1826.

Case of Ulcerated Cornea, from inanition. In a Letter to the Editor, from Joseph Brown, M. D., Sunderland.

On going yesterday to visit a poor babe which you know I was attending at ———, I found that both corneae had become opake over a considerable portion of their surface, and that ulceration had commenced; and, on repeating my visit to-day, I found that this ulceration had proceeded so rapidly, that, should the little patient live four and twenty hours longer, I am convinced that the contents of the eyes will be discharged. The child, which is six months' old, is as much emaciated as possible, the movement of the intestines being visible through the parietes of the abdomen. It was born prematurely, and never had the breast-milk. Since my attendance, which began ten days ago, its diet has consisted of asses' milk, sugar, and biscuit-powder. But, from the feebleness of the digestive function, it never seems to have derived sufficient nourishment from any food that has been given to it, and has been harassed ever since its birth with bowel complaints. Compare this case with Magendie's account of the dogs fed, or rather starved, on sugar.

CHEMISTRY.

Brome, a new substance, supposed to be simple; discovered by M. Balard.
(*Extract from the Annales de Chimie et de Physique, for August* 1826.)

Deep interest has been excited in the chemical world by the discovery of a new substance, which appears from the experiments of its discoverer, M. Balard of Montpellier, to be elementary. It was at first announced under the name of *Muride;* but as this appellation, for obvious reasons, is inconvenient, it has been since changed to *Brome*, from βρωμος, a bad odour.

Brome, at common temperatures, is a reddish-black coloured liquid, when viewed in mass and by reflection; but appears of a hyacinth red colour when a thin stratum is interposed between the observer and the light. Its odour is very disagreeable, somewhat similar to that of the oxides of chlorine, though much more intense; and its taste is equally powerful. It acts with energy on organic substances, such as wood, cork, &c., and especially on the skin, giving to the latter a yellow stain, which is less intense than that produced by iodine, and soon disappears, unless the application has been continued for some time. It is very injurious to animal life, one drop of it placed on the beak of a bird having proved fatal.

Brome bears an intense cold without freezing, retaining its liquid form at the temperature of zero of Fahrenheit. Its specific gravity is about 2.966, a circumstance which is very remarkable, considering its great volatility. On letting a drop of it fall into a bottle, an orange-red coloured vapour instantly rises, which is very similar to the fumes of nitrous acid; and at 116.5° Fahrenheit, it enters into ebullition.

Brome is not chemically affected by the imponderable substances. M. Balard transmitted it through a glass tube heated to redness, without decomposition; and it did not experience any change by the action of a Voltaic pile sufficiently powerful for decomposing water. It is a non-conductor of electricity.

"The vapours of brome cannot support combustion. A lighted taper introduced into an atmosphere of Brome is soon extinguished; but it burns for some moments with a flame, which is green at its base, and reddish at its upper part, in the same manner as in gaseous chlorine."

Brome is soluble in water, alcohol, and ether, particularly in the last. It does not redden litmus paper; but, like chlorine, destroys its colour rapidly. It likewise discharges the blue tint from a solution of indigo.

In its chemical relations, brome has a remarkably close analogy to chlorine and iodine, especially to the former. Thus it unites with hydrogen, forming a colourless acid gas, which yields dense white fumes when mixed with moist air; has a pungent odour, and excites the glottis powerfully. This acid, to which the name of *hydrobromic acid* is applied, forms neutral salts with alkalies. In degree of affinity for hydrogen, brome stands between chlorine and iodine; the hydrobromic acid, and all its compounds, are decomposed by chlorine, while the hydriodic acid is deprived of its hydrogen by brome.

At a high temperature, brome decomposes the alkalies and alkaline earths, with disengagement of oxygen gas, and formation of a metallic bromuret. Agitated with a strong solution of potassa, it undergoes the same change as chlorine or iodine under the same circumstances, giving rise to two salts, the hydrobromate and bromate of that alkali. The bromates are very analogous to the salts of chloric and iodic acids.

Brome, like chlorine and iodine, manifests a very powerful affinity for the pure metals. Antimony and tin take fire by contact with brome. Potassium emits so much heat and light at the moment of combining with it, that a detonation ensues sufficiently violent for bursting the vessels in which the experiment is conducted. The bromuret of potassium is converted into the hydrobromate of potassa, when put into water.

Brome exists in sea water in the form of hydrobromic acid, combined, in the opinion of M. Balard, with magnesia. It is present, however, in very small quantity; and even the uncrystallizable residue called *bittern*, left after the muriate of soda has been separated from sea water by evaporation, contains but little of it. On adding chlorine to this liquid, an orange yellow tint appears; and, on heating the solution to the boiling point, the red vapours of brome are expelled, which may be condensed by a freezing mixture. A more convenient process for preparing brome, is to transmit a current of chlorine through the bittern, and then to agitate a portion of ether with the liquid. The ether dissolves the whole of the brome, from which it receives a beautiful hyacinth red tint, and, on standing, rises to the surface. When the ethereal solution is agitated with caustic potash, its colour entirely disappears, and, on evaporation, cubic crystals of the hydrobromate of potassa are deposited.

M. Balard has ascertained the existence of brome in marine plants, which grow on the shores of the Mediterranean Sea, and has procured it in appreciable quantity from the ashes of the sea-weeds, which furnish iodine. He has likewise detected its presence in the ashes of some animals, especially in those of the *Janthina violacea*, one of the testaceous mollusca.

Since the experiments of M. Balard have not as yet been confirmed by other chemists, it would be premature to form a decisive opinion as to the real nature of brome. We may observe, however, that MM. Vauquelin, Thenard and Gay-Lussac, in their report to the Royal Academy of Sciences of Paris, regard the existence of brome, as a new simple substance, as very probable, though they express themselves on the subject with great caution.

On the Presence of Iodine in Mineral Waters. Extract of a Letter from M. Liebig to M. Gay Lussac. (From the Annales de Chimie et de Physique, vol. xxxi.)

I have been for some time occupied with the analysis of the saline springs of our country (Darmstadt), and I find that iodine is contained more or less abundantly in all of them. It is by the use of nitro-muriatic acid, diluted with sixty times its weight of water and starch, that I have been able to detect the least trace of that substance in the water of those springs when concentrated by evaporation.

The water of the salt-springs of Kreutznach (Theodorshalle) is remarkable for the large quantity of hydriodic acid or iodine which it contains; besides which, the muriates of lime and magnesia are found in it. I mixed six pounds of the mother-liquor of that water with sulphate of soda, and after separating the sulphate of lime, I evaporated the solution till the greater quantity of the muriate of soda had crystallized. The dark brown residue, distilled with its own weight of sulphuric acid, yielded 0.253 gramme of iodine.

Adulteration of the Sulphate of Kina.

M. Vinkler has sometimes found the sulphate of kina adulterated with powdered sugar, the proportion of which has in some instances amounted to one-fifth of the weight of the mixed salt.

Neither the taste nor combustion appeared to him sufficient for detecting the fraud; because, in the first case, the strong bitter of the sulphate of kina covers the sweet taste of the sugar; and, in the second, because the decomposition of the kina by fire, affords products which prevent the odour of burning sugar from being perceived.

He was obliged to have recourse to a chemical process; he dissolved the impure salt in water, and precipitated the alkali by a quantity of carbonate of potash, just sufficient for the purpose. The decanted liquor then gave the sweet flavour of the sugar distinctly.—*Journal de Pharmacie for April.*

MEDICAL JURISPRUDENCE.

Marischal College and University Aberdeen.—Regulations respecting Medical Degrees.

I. EVERY person offering himself as a candidate for the degree of Doctor of medicine, shall, 1*st*, produce satisfactory evidence of his possessing a good character, and of his having attained the age of twenty-five years; and, 2*dly*, shall lay before the Senatus Academicus certificates of his having obtained the degree of Master of Arts, in this or some other university, after the usual examinations *; of his having attended courses of lectures on anatomy, surgery, chemistry, materia medica, theory and practice of physic, and botany, in this or some other university, or celebrated school, under professors or teachers of reputation; and of his having attended, for three or more years, a medical hospital, containing the average number of at least eighty patients.

II. After the Senatus Academicus shall have been fully satisfied on the above preliminary points, the applicant shall be received as a candidate for the degree of Doctor of Medicine, and shall be required to appear before the university, at one of their stated terms for granting such degrees, and in their presence be examined, by the medical and other professors, on the different branches of medical science, on his knowledge of the Greek and Latin language, and on such other branches of literature as they shall see proper. If fully satisfied with the qualifications of the candidate, the university shall confer on him the degree which he solicits.

November 26. 1825.

We understand that the King's College have enacted the same regulations as the Marischal College, and that they have jointly adopted the resolution not to confer the degree of Doctor of Medicine upon any individual who shall not have fully complied with them. They, of course, reserve to themselves the power of granting honorary degrees to distinguished members of the profession.

Letter from Leyden. To the Editor of the Lancet. September 23. 1826.

Magni nominis umbra. LUCAN.

LEYDEN is now only the shadow of its former greatness; it is commercially rich, but poor in reputation—poor, when compared with the times of Boerhaave, Albinus, and Camper. There is no bustle in the streets, no throngs of students, no hum of merchants; the great gates of the university look melancholy, and the huge houses, now thinly peopled, only remind the traveller of the former splendour of the town.

The Chinese allow no books to be brought within the great empire of the sun; the Dutch, on the contrary, receive all, but of late years have sent none out. It is almost as rare to see a new Dutch book as a Swedish or Norwegian; and only six medical works were published last year in the two kingdoms of Norway and Sweden. The booksellers in Leyden are, for the most part, antiquaries, but they do business after a bad fashion; they have no fixed price for their book, but according as they know the works bargained for to be scarce, so they set a high price upon them. Here again the stranger must be careful not to give what they ask, but usually a third less. They have no catalogues, and indeed it would be difficult to make one where the stock is changing almost daily.

* As this requisition, requesting the degree of Master of Arts, might prove injurious to some medical students, whose education is now in progress, were it to take effect immediately, it is resolved that it shall not come into full force till the year 1830.

Sandifort, as an anatomical teacher, is well known; he is an ingenious, well read man, and is very skilful in the putting up of his anatomical preparations. It is impossible to see even the skeletons of animals prepared in a neater way: there is, for example, the perfect skeleton of an enormous snake, excellently shown; the arrangement shows the extreme flexibility of the spine very accurately: it is the same with the other skeletons; they are made to represent the natural actions of the animal, whilst in the museums of Brugmann and Vrolik, every thing looks stiff and unnatural. The old Sandifort was a very learned man, and collected a great many rare and curious works.

The original work of Asellius on the lymphatics, De Lacteis Venisque, with illuminated plates, and the rare work of Wirtsung, describing his discovery of the pancreatic duct, are among some of the biblical curiosities of Sandifort. The attention of the medical traveller is soon arrested by the museum of the celebrated Albinus; it was purchased of his widow for six thousand guilders. It is an object of great curiosity. The whole of his preparations are enclosed in two small cases; in the one are the dry preparations, almost all of which are bones: there are many specimens of anormal formations of the teeth, particularly in the upper jaw, which Albinus has described in his Annotationes. There is an excellent series of preparations to show the formation of bone, and the separate bones of the fetus are put up with greater elegance than I have any where seen; they are preserved in spirits of wine. The injections of the blood vessels of the pia mater, and of the peritoneum, are very beautiful; the other injected preparations are good certainly, but not very superior to such as are usually found. Having been made by Albinus, however, they are much esteemed. The great art in putting up wet preparations, is to macerate them a sufficient time, *gradually increasing* the strength of the spirit, until all the blood be extracted. The preparation should then be put into pure spirits, and be firmly secured. Sandifort tried to keep this method a secret, and, for a certain time, succeeded in doing so, much to his discredit. There should be no secrets in science; and particularly in those connected with physic. We should remember that we owe to the labours of our forefathers, most of what we now know of the healing art; and if chance or research have thrown ought in our way likely to benefit mankind, we ought to esteem it our duty to make it known,—we ought, in short, to conceal nothing. The motives of a man may always be regarded with suspicion, who tries to keep any supposed or real advantage a secret. The Dutch are justly celebrated for the neatness of their museums, and this is the principal cause of their spiritous preparations looking so well.

The annual expences of the student at Leyden are high. I was informed, by one of them, that it requires economy to come through the year with 800 guilders, about L. 74,—a much larger sum than would be necessary in any other than an university town. In the Peterschurch are two monuments which no medical man would omit to see; the one is erected to the memory of Boerhaave and the other to Camper. Boerhaave's is an urn of white, placed on a pedestal of black marble: on the pedestal hangs a medallion of white marble, with the inscription, "Sigillum veri simplex," and in front is the dedication "Salutifero Boerhavii Genio Sacrum, antus d. 31 Dec. 1668, Denatus d. 23 Sep. 1738." The urn is entwin ed by a wreath of heads, in bas relief, which gives the whole a too overloaded appearance. Camper's monument is simple and neat; his bust in white marble, *à l'antique*, is placed on a pedestal of black; on the front of which is this inscription:—"Petrus Camper, geboren te Leyden, den 11 May 1722, overleden den 7 April 1789." This bust is said to be a striking likeness of Camper; it was sculptured from his celebrated portrait by Runhard Vinkelis. Camper, although very much respected in Holland, was a very vain man, but his arrogance was almost insufferable, after he became a member of the States' Assembly. It used to be a favourite expression with him when pointing out any thing he supposed new, "People will always say, that Camper observed this." Boerhaave was certainly a very rich man, but he did not gain all his wealth by physic;

he partook of the commercial spirit of his countrymen, and was, at one time, a large speculator in wool. His favourite residence was at Lond, just a short distance from Leyden, which he purchased of an Englishman; it was here that he spent so much time in the cultivation of tulips. Brugmann, one of the professors, is in possession of many of the letters of Boerhaave; among others is one to a student, who aped Boerhaave in his slovenly manner of dress. The old gentleman did not like to be mimicked, so he told him, "that although slovenliness might become an old man, it was not fitted for a youngling." He was very avaricious, and old Gaubius was still more so; neither of them would give their advice to persons not well known without first having the fees. A nobleman of Mecklenburgh requested Boerhaave's advice, by letter, respecting his wife; he wrote him twice but got no answer. He sent him a third letter, with 100 ducats, and Boerhaave in return, told him that his wife must ride. Now as the Mecklenburghers have very fine horses, they understand by riding, exercise *à cheval;* the noble lady was put on the back of a fine roadster, and in a short time was jolted to death. The husband was very wroth, and wrote Boerrhaave a furious letter, but the old physician sent word, that by riding, in Holland people meant sailing on a canal. He had forgotten, however, that there were no canals in Mecklenburgh.

BOTANY.

NOTICES of BOTANICAL WORKS.

CURTIS'S BOTANICAL MAGAZINE.

No. 474.—T. 2663, *Rhamnus latifolius*, Herit. Azores.—T. 2664, *Kennedia coccinea*, Vent. New Holland.—T. 2665, *Astragalus Onobrychis* L. v. *tenuifolius*. Russia.—T. 2666, *Thymus nummularius*, Bieb. Caucasus.—T. 2667, *Azalea indica*, Spreng. var. γ.—T. 2668, *Helianthus atro-rubescens*, L. United States.—T. 2669, *Heliotropium curassavicum*, L. West Indies.—T. 2670, *Valantia taurica*, Willd. Tauria.

No. 475.—T. 2671, *Banksia Æmula*, Br. New Holland.—T. 2672, *Hibbertia corifolia*, Sims. New Holland?—T. 2673, *Colchicum crociflorum*, Sims. From seeds supposed to be collected near Hertford. Nothing more we presume than a variety of *C. autumnale.*—T. 2674, *Spartium Ætnense*, Bivon. Mount Ætna.—T. 2675, *Cornus mascula*, L. Austria, &c.——T. 2676, *Cassia australis*, Sims. New Holland and New Zealand.

No. 476.—T. 2677, *Patersonia glauca*, Br. New Holland.—T. 2678, *Dracophyllum gracile*, Br. New Holland.—T. 2679, *Daviesia acicularis*, Sm. New Holland.—T. 2680, *Pulmonaria paniculata*, Willd. var. α. Hudson's Bay.—T. 2681, *Feuillæa pedata*, Sm. Mauritius.—T. 2682, *Lupinus mutabilis*, Sweet. Columbia.—T. 2683, *Hesperis grandiflora*, Sims. Country unknown.

No. 477.—T. 2684, *Crinum procerum*, Carey. Birman Empire.—T. 2685, *Ismene calathina*, Herb. Brazil.—T. 2686, *Bromelia zebrina*, Herb. Brazil, (with a specific character 19 lines in length!)—T. 2687, *Phycella ignea*, Bot. Reg. var. β. Herb. Valparaiso.—T. 2688, *Crinum capense*, v. *riparia*, Herb. Cape of Good Hope.

No. 478.—T. 2689, *Potentilla atro-sanguinea*, Lod. Nepaul.—T. 2690, *Gloxinia hirsuta*, Lindl. Brazil.—T. 2691, *Cactus polyanthos*, Hook. South America?—T. 2692, *C. Phyllanthus*, L.—T. 2693, *Lobelia corymbosa*, Hook. The Cape.—T. 2694, *Bœckia camphorata*, Br. New Holland.—T. 2695, *Leptospermum flavescens*, Sm. New Holland.—T. 2696, *Wrightia coccinea*, Hook. Sylhet.

The last Number is the first which has appeared since the continuation of the work has been undertaken by Dr Hooker. The paper, the drawing, the engraving, and the colouring are very considerably improved, and scientific

analyses are besides added to every plate. A new series is to be commenced on the 1st of January, and we recommend our readers to take a work, which, in addition to its botanical and ornamental character, conjoins the very important one, that it is now beyond dispute the cheapest publication of the kind in the world.

BOTANICAL REGISTER.

No. 135.—T. 970, *Lessertia fruticosa*, Lindl. The Cape.—T. 971, *Velleia paradoxa*, Br. New Holland.—T. 972, *Prockia crucis*, Willd. Havannah.—T. 973, *Lobelia arguta*, Lindl. Chili.—T. 974, *Uropetalum longifolium*, Lindl. Island of Mafmall.—T. 975, *Gardenia propinqua*, Lindl.—T. 976, *Rosa Woodsii*, Lindl.—T. 977, *Aspidistra punctata*, Lindl. China.

No. 136.—T. 978, *Eria rosea*, Lindl. China.—T. 979, *Leucodendron argenteum*, Br. The Cape.—T. 980, *Cucumis africanus*, L. The Cape.—T. 981, *Sarcanthus rostratus*, Lindl.—T. 982, *Crotalaria tenuifolia*, Roxb. Coromandel.—T. 983, *Camellia euryoides*, Lindl. China.—T. 984, *Hæmanthus pubescens*, β *albiflos*.—T. 985, *Pelexia spiranthoides*, Lind. St Vincent's.

No. 137.—T. 986, *Chorizema Heuchmanni*, Br. New Holland.—T. 987, *Narcissus Macleaii*, Lindl. Smyrna.—T. 988, *Amaryllis vittata*, γ *Harrisoniæ*. Lima.—T. 989, *Megaclinium falcatum*, Lindl. Sierra Leone.—T. 990, *Griffinia intermedia*, Lind. Rio Janeira.—T. 991, *Indigofera angulata*, Lindl. New Holland.—T. 992, *Gilliesia graminea*, Lindl. Valparaiso. This new genus is named in honour of Dr Gillies, a most active and intelligent Scots physician and naturalist, now resident at Mendoza, in Chili.

No. 138.—T. 993, *Æsculus Pavia*, v. *arguta*, De Cand.—T. 994, *Swainsonia galegifolia*, Br. var. β.—T. 995, *Hyacinthus orientalis*, L. Aleppo.—T. 996, *Aloe brevifolia*, Haw.—T. 997, *Sinningia Helleri*, Nees. Brazil.—T. 998, *Phalangium Nepalense*, Lindl. Nepal.—T. 999, *Convolvulus pudibundus*, Lindl. South America.—T. 1000, *Boronia denticulata*, Sm. New Holland.

No. 139.—T. 1001, *Hibbertia pedunculata*, De Cand. New Holland.—T. 1002, *Eulophia streptopetala*, Lind. Brazil.—T. 1003, *Salvia Simsiana*, Schultes. Russia.—T. 1004, *Gloxinia hirsuta*, Lindl. Brazil.—T. 1005, *Daviesia cordata*, De Cand. New Holland.—T. 1006, *Pyrus floribunda*, Lind.—T. 1007, *Oncidium pubes*, Lindl. Rio Janeiro.

HOOKER'S EXOTIC FLORA.

Part 35.—T. 213, *Catasetum semiapertum*, Hook. Brazil.—T. 214, *Conanthera? campanulata*, Hook. Chili.—T. 215, *Pyrethrum diversifolium*, Grah. New Holland.—T. 216, *Grevillea pubescens*, Hook. New Holland.—T. 217, *Maxillaria parvula*, Hook. Brazil.

Part 36.—T. 218, *Tillandsia nitida*, Hook. Jamaica.—T. 219, *Maxillaria aromatica*, Grah.—T. 220, *Dryas integrifolia*, Vahl. Canada.—T. 221, *Arabis arenosa*, Scop. South of Europe. T. 222, *Marica cærulea*, Bot. Reg.

GREVILLE'S SCOTTISH CRYPTOGAMIC FLORA.

No. 49.—T. 241, *Peziza æruginosa*, Pers.—T. 242, *Thelephora Sambuci*, Pers.—T. 243, *Palmella protuberans*, Grev., and *P. botryoides*, Lyngb.—T. 244, *Gomphonema minutissimum*, Grev., and *G. geminatum*, Ag.—T. 245, *Polyporus lucidus*, Fries.

No. 50.—T. 246, *Oscillatoria rupestris*, Grev.—T. 247, *Palmella hyalina*, Lyngb.—T. 248, *Sistotrema confluens*, Pers.—T. 249, *Agaricus laccatus*, Scop.—T. 250, *Erineum fagineum*, Pers., and *E. populinum*, Pers.

No. 51.—T. 251, *Uredo candida*, Pers.—T. 252, *Perichæna populina*, Fries.—T. 253, *Ceuthospora phacidioides*, Grev.—T. 254, *C. Lauri*, Grev.—T. 255, *Monilia antennata*, Pers.

No. 52.—T. 256, *Auricularia reflexa*, Bull.—T. 257, *Stachylidium terrestre*, Link.—T. 258, *Cantharellus cibarius*, Fries.—T. 259, *Raccodium cellare*, Pers.—T. 260, *Ozonium auricomum*, Link.

No. 53.—T. 261, *Conferva ericetorum*, Roth., and *C. alpina*, Bory.—T. 262, *Chlorococcum vulgare*, Grev.—T. 263, *Erineum Sorbi*, Funck, and *E. Juglandis*, Gaertn.—T. 264, *Thelephora laciniata*, Pers.—T. 265, *Ulva furfuracea*, Fl. Dan.

On the VENATION of LEAVES. By JOHN LINDLEY, Esq.

The observations upon this subject brought forward by Mr Lindley, in the 139th Number of the Botanical Register, seem to us so important, that we shall make no apology to our readers for transcribing them nearly verbatim. We are certain that, independently of their physiological value, they will be duly appreciated by every practical botanist. It has always appeared to us, observes Mr Lindley, a great defect in botanical terminology, that no precise method should have been contrived for explaining the peculiar arrangement of the veins of leaves. The observations of Professor Link upon this subject (Elem. 183) are not sufficiently circumstantial to form an exception to this remark. Botanists are accustomed to speak of leaves with reference to their figure, their surface, their margin, or their position, in the most accurate terms: of the arrangement of the veins, and of the relation which they bear to each other in different parts of the leaf, the mode of expression is usually too indefinite to convey any clear ideas. And yet we believe the subject will be found of the first degree of importance in considering the natural affinities of vegetables. All practical botanists, and the greater part of common observers, recognise a plant by its foliage as readily as by its inflorescence. It is by the leaves and branches of its trees, and not by their flowers, that the vegetation of a country acquires those peculiarities of appearance for which the different latitudes of the world are remarkable. In our own country, it is not the puny flower of the Oak, and of other *Amentaceæ*, which gives a character to our forests, but the clothing of verdant foliage with which the All-wise Creator has provided them; neither, in the tropics, does the inflorescence of the Bananas, and the numerous tribes of Palm trees, give that extraordinary appearance to the landscape, which is produced by the wondrous foliage of those extraordinary trees, which have been well described as the princes of the vegetable world.

Having a high idea of the relation which the peculiarities of leaves bear to the general arrangement of nature, we shall endeavour to explain in what way we conceive it possible to name the various forms of venation, so as to render them capable of being adapted to methodical description. This object will be most readily effected by describing the idea we attach to a simple leaf, of the most complete kind, in any common dicotyledonous plant.

Such a leaf has a main bundle of vessels running through its axis from the base to the apex, which bundle of vessels is called a *costa*. It is usual to ascribe only one costa to a simple leaf, all lateral ramifications, from whence soever they proceed, being considered to be lateral veins. It is, however, more natural to understand, that, in truly lobed leaves, which may be supposed to be simple leaves approaching a state of composition, there are several costæ, the bundles of vessels commonly called lateral veins, and passing from the base of the leaf to the apex of each lobe in an uninterrupted right line, being in fact of that nature; as is plainly shewn by the disposition of the veins which pass from each costa.

The costa sends forth, alternately right and left along its whole length, ramifications (*venæ primariæ*) of less dimensions than itself, but more nearly approaching it than any other veins. These *venæ primariæ* proceed from the costa at various angles, and are carried towards the margin; when they arrive at a certain distance from the axis, they take a curve in the direction of the margin, again bend inwards towards the axis, and in this course form an anastomosis with the back of the *vena primaria*, which lies next them. That part of the *vena primaria* which is beyond the anastomosis thus described, having a curved direction, may be called the *vena arcuata*. Between the latter and the margin, other veins, with a similar direction, and of similar power, occasionally intervene; as it will sometimes be necessary to speak of them,

they may be distinguished by the name of *venæ externæ*. The margin itself and these last are connected by a fine network of minute veins, which we would designate as *venulæ marginales*.

From the costa are often produced, frequently at right angles with it, and alternate with the *venæ primariæ*, smaller veins, which may be considered as incomplete *venæ primariæ*, and may be not improperly named *venæ costales*. The *venæ primariæ* are themselves connected by veins which proceed from each, and anastomose in the area between them. These veins, where they immediately leave the *vena primaria*, we would name *venulæ propriæ*, and the reticulation formed by the anastomoses of their extremities *venulæ communes*. We have said that the *venæ primariæ* proceed from the costa at angles of various degrees. We conceive that terms should be employed to explain nearly at what angle they leave the costa; as *subparallelæ*, when they form an angle of 10° to 20°, as in most monocotyledones; *patentes*, if the angle varies from 40° to 60°; *obliquæ*, when the angle exceeds 90°, and so on.

Having thus attempted to establish the necessary nomenclature, we may proceed to shew, as far as our limits will allow us, in what way it may be adapted to practice.

If we view the subject only with reference to the first great divisions of the vegetable kingdom, we shall find, that the development of the veins is always in direct proportion to the dignity of the division. Thus, in the lowest tribes, *Fungi* and *Algæ*, veins do not exist; in *Musci* they appear under the simple form of a more or less complete costa; in *Filices* the costa becomes more perfect, and numerous lateral veins are formed, which do not, however, arrange themselves under the same laws as obtain in the higher divisions, but are all of equal power, and may perhaps be considered as *venulæ propriæ*. In *Monocotyledones*, the next in rank to *Filices*, *venæ primariæ* are for the first time formed, and are either connected or not by means of *venulæ propriæ*; but, with the exception of some *Aroideæ*, plants of this division possess neither *venæ arcuatæ*, *venæ externæ*, nor *venulæ marginales*, these being developed only in those highest tribes of vegetables called *Dicotyledones*.

If we consider the peculiarities of venation in a more confined sense, we shall find them scarcely less important. True *Aroideæ* are distinguishable from other monocotyledones by the presence of *venæ arcuatæ* and *venulæ marginales*. In some plants of the same great division, both *venulæ propriæ* and *venulæ communes* are absent; in others, the former only exist; the latter are rarely discoverable. The absence of *venæ arcuatæ* and *externæ*, and the abundance of *venulæ propriæ*, give the peculiar character of the leaves of *Amentaceæ*. Nearly the same observation may be made upon *Dillenaceæ*, with the exception of *Hibbertia* and its allies. *Myrtaceæ* are well characterized by the parallelism and straightness of the *venæ primariæ*, the confluence of all the *venæ arcuatæ* into a continuous line parallel with the margin of the leaf, and the occasional presence of *venæ externæ* in the same direction as the *venæ arcuatæ*.

GEOGRAPHICAL DISTRIBUTION of MARINE PLANTS.

An article on this novel subject has appeared in the *Annales des Sciences Naturelles*, and is from the pen of the late M. Lamouroux, the first naturalist who attempted to throw marine plants into systematic arrangement. The earliest essay on a subject where details are so difficult to be procured, and, above all, to be authenticated, must necessarily be imperfect; and M. Lamouroux does not pretend to do more than give a general outline, by collecting and arranging such facts as he has been able to establish.

"The geographical distribution of plants," he observes, "upon the surface of the terrestrial portion of the globe, has for some time fixed the attention of the most learned botanists. In the immortal works of Linnæus we find the earliest ideas on the subject; and others were suggested by M. Raymond when speaking of the stations of the Pyrenean plants; but it was reserved for Messrs de Humboldt, De Candolle, and R. Brown, to establish them upon correct principles. Their numerous observations, added to those of pre-

ceding travellers, seem to have exposed the principal laws followed by nature in this great phenomenon, scarcely suspected to exist half a century ago. In this point of view, Marine Plants have escaped the notice of all naturalists."

M. Lamouroux possessed peculiar facilities for supplying, in some degree, this desideratum. His herbarium contained above 1200 species of marine vegetables. He had access to the collections of Delessert, De Jussieu, Desfontaines, Labillardière, Bory, &c., and that of the Museum so rich in species from the South Sea.

We shall offer a condensed view of some of the most striking observations of our author.

As among phenogamous plants, so among marine ones, peculiar forms appear to predominate in certain localities, both in regard to genera and species; as we approach their boundaries, they gradually disappear, and give place to others equally characteristic. The species found on the coasts of South America seem to be, in some respects, governed by the same laws as the more perfect vegetables, and, like them, differ entirely from those of Africa and Europe. Phenogamous plants have furnished botanists with many great systems of vegetation, and a marked difference has been recognized between the plants of America, Africa, Asia, Australia, and Europe. The author endeavoured to trace these great divisions among marine plants, and has observed that the polar Atlantic basin, to the 40th degree of north latitude, presents a peculiar vegetation, and the same may be said of the sea of the Antilles, including the Gulf of Mexico,—of the eastern coast of South America,—of the Indian Ocean and its gulfs, and of the coasts of New Holland. The Mediterranean possesses a vegetation to itself, extending as far as the Black Sea; and, notwithstanding the geographical proximity of the Port of Alexandria and the coasts of Syria to the coasts of Suez and the Red Sea, the marine plants of the former differ almost entirely from those of the latter. We know too little of the eastern coasts of Africa to speak of their vegetation, which ought to resemble that of the Canaries, differing again from that of the Antilles. The western coast of America, and the immense Magellanic ocean, are in the same predicament. We know that the *Laminaria pyrifera* of the Australian Seas reaches as far as Valparaiso; that the *L. porroidea*, the famous *Porro* of the Spaniards, begins to shew itself at Callao, and continues to be found as far as 600 leagues to the north, where its appearance used to be hailed by vessels returning from the Philippines as a proof of the dangers of navigation being over.

Every great zone presents a peculiar system of existence; and it has been said that, after a space of twenty-four degrees of latitude, a nearly total change is observed in the species of organized beings, and that this change is mainly owing to the influence of temperature. If this holds good, as we know it to do to a wonderful extent, in phenogamous plants, it would also appear to exert some force upon marine vegetables. In the warmest months of the year the Algæ of our own coasts are found in the greatest abundance, and in unusual luxuriance in hot seasons. It is probable that these plants may be acted on by the temperature of the water, as they occur at greater or less depths; and that the species which grow at the bottom of the ocean under the equator, may have some relation to those of the polar circle.

In particular localities, a difference in the soil exercises the greatest influence over the species of marine plants.

The less distant one coast is from another, the greater analogy is exhibited in the vegetation. Thus, the plants of the coast of Kamtchatka, Hudson's Bay, Baffin's Bay, Spitzbergen, Iceland, and the north of Norway, are very similar. On the contrary, those of Denmark and Newfoundland, of France and the United States, have less relation to each other than to those of the polar circle, because these countries are respectively too remote.

M. Lamouroux has now reduced his six classes of marine plants to four, viz. *Fucaceæ*, *Florideæ*, *Dictyoteæ*, and *Ulvaceæ*. All the plants composing the Linnean genus *Conferva* enter, we think most incongruously, into these four classes.

The researches of Wulfen, Turner, Agardh, De Candolle, and our author, make it appear that the *Florideæ* predominate greatly over the *Fucaceæ*, and the latter over the *Ulvaceæ*, which last, again, are more numerous than the *Dictyoteæ*. The *Fucaceæ* increase as they approach the temperate and warm regions, as well as the *Florideæ*. The latter at first about twice as numerous as the former, soon double that proportion. The *Florideæ* begin to diminish about Lat. 44° or 45°, and more rapidly about Lat. 35°; while the *Fucaceæ* remain stationary, or even increase.

The number of the *Dictyoteæ* uniformly augments from the polar circle to the equator.

The *Ulvaceæ* vary in a trifling degree. The larger species increase where the smaller ones (the *Confervoideæ*) diminish.

The polar zone may be almost regarded as the native region of the *Ulvaceæ*; the temperate zones as the regions of the *Florideæ*; and the neighbouring zones of the two tropics, as well as the equator, as the regions of the *Fucaceæ* and *Dictyoteæ*.

The number of species in the rich herbarium of M. Lamouroux is stated to be 1200, and the number supposed by him to be known to botanists 1600. We consider this as greatly exaggerated, since the *Systema Algarum* of the celebrated Agardh, published in 1824, does not contain 1100 species. The total amount of species supposed to exist is conjectured by M. Lamouroux to be at least 5000 or 6000.

Our limits will not allow us to insert many interesting facts regarding the distribution of particular or analogous genera or species, brought forward for the first time by M. Lamouroux, but which are well worth the attention of the naturalist.

ZOOLOGY and BOTANY of SOUTHERN AFRICA.

We are certain that many of our readers will thank us for informing them, that an opportunity is at present afforded them of procuring the valuable zoological and botanical productions of Southern Africa, at a very reasonable expence. Mr James Bowie, himself an active and intelligent naturalist—for many years employed by government to collect plants for the Royal Garden at Kew, is about to receive and execute commissions intrusted to him by private individuals, and, as we hear, at some such rates as the following, will collect and send home well-preserved specimens:

Dried Plants, at £2, 10s. the hundred species.
Seeds, £5 the hundred species.
Bulbs; small ones, 10s. the hundred; larger ones, 1s. to 1s. 6d. each.
Live Plants, 2s. 6d. (If small succulent plants, about three kinds reckon as one.)
Strelitziæ, *Zamiæ*, *&c.* and plants of similar size, 5s. each.
New Species will be charged rather higher.
Birds: for small birds' skins up to the size of *doves*, 1s. each specimen. From that size upwards, in proportion, to that of a *vulture* or *eagle*, about 7s.
Birds for Dissection, preserved in spirits, about £5 the hundred, without regard to size.

Should other subjects be desired by naturalists, they will find Mr Bowie (whose address is Kew Green, Surrey) most ready to concur with their wishes. He proposes not to confine himself to the neighbourhood of the Cape, but to travel into the interior.

P. Neill, Printer.

THE

EDINBURGH JOURNAL

OF

MEDICAL SCIENCE.

PART I.

ORIGINAL PAPERS,

AND COMMUNICATIONS FROM VARIOUS CHANNELS.

MANCHESTER MEDICAL LIBRARY

I. PRACTICE OF MEDICINE.

On an Ephemeral Arthritic Fever, which was prevalent on board the Honourable Company's Ship Asia, during the months of February and March 1825. By J. A. Ore, Member of the Royal Medical Society of Edinburgh, Assistant Surgeon 95th Regiment, formerly of the Honourable East India Company's Ship Asia.

During the months of February and March 1825, on the homeward passage, a fever, of the quotidian type, became prevalent among the seamen and officers of the H. C. S. Asia. The general symptoms on admission were pain in the head, slighter pains in the joints of intricate structure, such as the knees, ankles and wrists, with universally diffused rigors, and great prostration of strength, furred tongue, hot skin, and accelerated pulse, more particularly increased four or five hours after the complete accession of the fever. Where purgatives were administered, they usually, although given in small doses, excited inversion of the peristaltic motion of the intestinal canal, which was only allayed by giving an emetic of ipecacuanha previous to readministering the cathartic. In many cases, such was the lax and enfeebled state of the system, that, by giving mercury, even in divided doses, and to the amount of twelve, fourteen or

twenty grains, a copious ptyalism was excited, attended with fetid breath, ulceration of the gums, and considerable irritability and erection of the papillæ of the tongue.

The most severe period of this fever seemed to be between noon and midnight of the first day after its complete formation; and, *on the second, the patient had in general no fever, but complained chiefly of arthritic pains;* which, in nineteen cases out of twenty, remained for four, six, or sometimes ten days; and long after the seaman had returned to his duty, he was, on the change from fine to squally, or wet and cold weather, compelled again to apply for aid, complaining of universal pain, numbness, and an inability to retain his hold, or remain in a fixed position, even for a few minutes.

The usual mode of treatment consisted in giving, at the commencement, an emetic of ℈ij of ipecacuanha, and, a few hours after, a purgative of calomel in small doses, followed by senna and epsom salts, scammony, jalap, or some of the resinous cathartics; and, next day, the pulvis ipecacuanhæ compositus in xv. gr. doses, repeated thrice a day, and a liniment of cocoa nut oil and ammonia rubbed externally on the parts most affected with pain. In a few cases, bleeding was had recourse to, but only in those of a full and plethoric habit, and who had no complaint while in the country. It is worth remarking, that the emetics administered never produced any disagreeable consequences, such as is said to be the case usually on the administration of these medicines in the diseases of India, although we were, at the period of occurrence of this fever, almost under the Equator. Nor, indeed, can it be said that they produced any marked beneficial effect, except in cases where unloading the stomach of acrid and indigestible substances was of the utmost moment. It may be questioned whether resinous cathartics, such as have been previously noticed, were the best suited in this form of fever. It is but fair to state, that the cold affusion might have been beneficial here, although it was never ordered, nor indeed permitted, as it was in the fevers of a similar nature, which prevailed in the ship while under my charge in Diamond Harbour, and where its effects were decidedly beneficial. In many cases the diaphoretic mixture, which was generally given of ipecacuanha and opium, and to which a few drops of aqua ammoniæ, say guttæ xx., were added, very often occasioned nausea, and not unfrequently vomiting.

In a few instances the ammoniated liniment externally applied, seemed to prove somewhat beneficial, but its success was never uniform, or definitely marked.

As we approached the Cape of Good Hope, the fever became, as the temperature fell, more mild, and of less frequent occurrence, being nearly the reverse of the observations in fever as met with in England, which usually becomes extinct on the

coming on of warm weather. We have, however, to remark the contrary, as the fever which I have thus faintly attempted to describe, took its rise in the ship while under the Equator, during hot and rainy weather, and coming from a northern into a southern latitude. The diet of the ship's company, as is usual, consisted chiefly of salted provisions, such as beef and tripe, and twice or thrice a week pease-soup and pudding. I am not aware that any vegetables were served out, nor do I think it is usual. For the first three or four weeks after leaving Madras, the grog served out to the seamen and petty officers, consisted chiefly of arrack and lime-juice, and, if I may be allowed to judge, of no superior quality to that most pernicious spirit so universally met with both in Bengal and Madras. I have no doubt, had the cold affusion been used in an early period of this fever, but that it might, in a great measure, have prevented the coming on of those pains, which were the usual sequelæ of this fever; as in a few of the cases of a similar fever which occurred while the ship lay at Diamond Harbour in the Hoogley, and where the cold affusion was not used, fleeting pains, although it must be confessed less severe, came on. The stools were in general very acrid, coloured with ill-conditioned bile, and excessively fetid; copious at first, afterwards more watery, and consisting of the fluids, generally congee or water-gruel, previously taken; and, as the patient approached the apyrexial state, and these pains in the joints succeeded, the dejections became more bilious, and of a more natural colour and consistence. Sometimes a considerable degree of constipation of the bowels, at other times relaxation, with plentiful fluid evacuations, followed after the patient had been discharged to his duty. In some few cases the lymphatic glands became enlarged, swollen and highly painful, and in two or three cases the inguinal glands suppurated.

I have observed that, in two cases, where there existed ulcers of the leg, the sores did not assume a malignant aspect, nor did healthy action seem to have in the least abated, on the accession of the fever. In many cases, scorbutic diarrhea, or, if you will, dysentery, came on; the fecal discharges were excessively fetid, sometimes of an appearance approaching to dysentery, and attended with tormina, tenesmus, and griping about the umbilicus, and stretching along into the ilio-lumbar region: at other times, and even in the same patient, of a slimy or chalky consistence, and white mawkish colour: sometimes *œdema pedum* followed, but only in those of a full and plethoric habit, and who previously laboured under visceral derangement, and in whom venesection had not been early had recourse to; but these swellings subsided by means of flannel bandages rolled tightly round the leg, accompanied by frictions with ammoniated liniment, and enjoining an horizontal position.

In one case of dropsical swellings in an old man of dissipated manners and enfeebled habit, the lower extremities regained their usual state, but the abdominal cavity seemed to contain more fluid. May not this, however, be in some measure accounted for, by the drastic purges which were given him, with the view of counteracting the effects of the fever?

This fever prevailed chiefly among those living in the second or gun deck; and only two cases occurred in which it attacked those who resided in the round house or poop; and in those it assumed a more mild type, and was followed by few or none of those pains otherwise so invariably attendant on this fever. During the greater part of the time when this fever prevailed, and from which very few of the ship's company, officers or passengers, were totally exempt, the access of air could only be admitted by means of windsails down the hatchways; the ship, from the uncertainty of the weather, heavy swell, and confused sea, being unable to carry her gun deck ports open. I may here remark, that, out of upwards of fifty invalided soldiers, belonging to the Honourable Company, living, too, in the same deck with the seamen, only three or four had this fever. How we are to account for this anomalous occurrence, seems to me no easy matter, if we admit the doctrine of contagion, as they were all subjected to its influence.

The fever which was prevalent at Madras and Bengal during the ship's stay at these places, and of which we had numerous cases while in Diamond Harbour, was early followed by those rheumatic, in some cases arthritic, pains, and was of rather longer duration. In these latter cases, which occurred while in harbour, mercury, when given, seldom or never excited soreness of the gums, much less well defined ptyalism, as was invariably the case in those which occurred on the passage home. Should it be urged, that the salted diet of the seamen occasioned, or rather facilitated, this predisposition in the system to be more easily acted on by mercury, I may add, that many of the officers, who generally live on fresh diet, had ptyalism to a greater or less extent. The soldiers never kept any watch, nor did any duty, except in cases of emergency, being for the most part but ill adapted to the requisite duties of a seafaring life; and generally so severely maimed or disabled, as to incapacitate them, in a great measure, from even going about the decks. In only two cases did this fever terminate fatally, by running into a rheumatic affection, with subsequent and severely marked symptoms of scorbutus. It might be useful to know, through the medium of your highly valuable work, whether a crew, subsisting chiefly on salted provisions, would, *ipso facto*, become more liable to have their constitutions more powerfully acted on, where mercury had been administered in the cure of disease; or whether, when febrile miasms, carried into the bodies of sea-

men, leaving the shores of India, produce a fever of a milder or more severe type than that whence it derived its origin; or, does the land air modify fever, or otherwise?

The fever which was prevalent in India, while we staid in the country, was, by account, unusually mild, and, in general, terminated favourably, but was of much longer duration.

Sunderland Barracks,
January 24. 1827.

Case of Poisoning by Arsenick, with Remarks on the Decolorizing Process of Mr Phillips. By William H. Forrest, Surgeon, Stirling.

A woman, about thirty years of age, swallowed half an ounce of the oxide of arsenick, on Saturday the 22d of July 1826, at seven o'clock in the evening. She was soon afterwards seized with excruciating pain in the region of the stomach, and bloody vomiting. Mr Alexander, surgeon, saw her about twelve. Her pulse, at this time, was nearly gone at the wrist; the extremities were cold, and the *burning* pain in the stomach and bloody vomiting excessively severe. She died next morning at three o'clock, in a cold exhausted state. She took two or three emetics, and milk, in large quantities, soon after she had swallowed the poison; and at twelve, a mixture of starch and water was prescribed by Mr Alexander.

After much difficulty Mr Alexander obtained permission to examine the stomach; but the man with whom the deceased lived, persisted in refusing permission to examine any other organ. He stood by and directed all the external incisions. The first extended only from the lower end of the sternum to a short distance below the umbilicus, from the lower part of which two other small incisions were made, in the direction of each ilium. With so small an opening the operator could not disengage the stomach; and it was afterwards necessary, in direct opposition to the orders of our superintendant, to cut up the thorax. This will explain the paucity of detail that follows.

Externally there was nothing remarkable, save a slight ecchymosis on the palmar aspect of the left forearm. The abdomen, together with every other part which we examined, was full, but not tumefied. The face, in particular, exhibited a remarkably placid and natural appearance. The stomach was lifted out entire, and its contents poured into a chopin bottle, which they exactly filled. Its external surface was quite healthy, but its internal surface was very much thickened and inflamed. It presented a very red, mottled, gelatinous appearance; but, on being scraped with a knife, it was found firm and unyielding. No

abrasion, and consequently no perforation, was discovered, although carefully looked for, both by Mr Alexander and myself. Other mucous surfaces not examined. Thoracic viscera healthy; blood quite fluid. Body examined twelve hours after death.

The contents of the stomach appeared to be a coagulated animal substance floating in a bloody fluid. No alimentary, or medicinal, or poisonous matter, was detected in it.

A little of this liquor, filtered, afforded, with the copper and silver tests, the characteristic precipitates of arsenick.

In its filtered state, the gastric liquor presented a dark bloody appearance, not unlike venous blood largely diluted; and although this did not materially affect the tests in the present instance, I thought it a good opportunity of trying the decolorizing process recommended by Mr Phillips *. Accordingly, a few grains (two pinches) of animal charcoal were digested in two ounces of the strained liquor, for two or three minutes, in a Florence flask, over a spirit-lamp. The colouring matter was completely removed; and on filtering the liquor it became quite limpid. With the cupreous test this fluid produced no sensible action whatever; but, with the silver test, a very copious cream-coloured precipitate was slowly thrown down.

These results coincide precisely with those obtained by Professor Christison †, and, with them, they go far to prove, if, indeed, they do not demonstrate the fact, that the decolorizing process of Mr Phillips, for enabling us to apply the fluid tests with more accuracy, is quite useless. In fact, it appears, that the whole of the arsenick is removed with the colouring matter from the liquid. In the liquid, it was not, in the present instance, recognized by its reagents; and flies which fed on the colouring matter died in a few minutes, whilst those which fed on the colourless liquid, according to the best of my knowledge, invariably escaped. Again, on drying the charcoal and colouring matter, and subjecting them, after being mixed with a third of their weight of potassa, in a naked glass-tube to the action of a spirit-lamp for a minute or so, a very large quantity of metallick arsenick was procured.

STIRLING,
Aug. 5. 1826.

On General and Local Plethora. By Dr KINGLAKE.

AN excessive fatness or plethorick state of the vascular system, is a condition of disease that not unfrequently occurs. During

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* Annals of Philosophy, January 1824.

† Edinburgh Medical and Surgical Journal, vol. xxii. p. 73.

an uninterrupted course of health, the digestive function of the organs allotted for preparing and supplying the aliment necessary for the support of life is steadily sustained, and is apt, under certain circumstances, to yield a superabundance of nourishment.

The result of immoderate nutrition is a general plenitude or plethora of the sanguiferous vessels. The adipose membrane, and the cellular tissue, are also loaded with obesity. If there be constantly furnished more than can be appropriated, a redundancy will arise, filling, first, every vacuity in the system, and then distending the containing vessels, and causing the several viscera, by their enlarged dimensions, injuriously to press on each other.

The vital processes of the animal economy, in supplying the means of existence, and the wear and tear of life, expend a large quantity of materials. These must be furnished to a given extent, without which deficiency would arise, leading to extenuation of bulk, diminution of strength, and final exhaustion ; yet, if the quantity rendered be larger than is necessary to replace the dissipation that is incessantly occurring, an inordinate fatness or morbid plethora will ensue.

If this state be general, the inconvenience arising from it will soon be intolerable, and, if not speedily remedied, serous and sanguineous effusions of the worst kind will be apt to occur. The various secretions, likewise, will soon partake in the unwieldy load with which the system is overwhelmed in cases of general plethora. The general strength, also, will become depressed, by the weight and fatness by which vital power will be universally oppressed.

Plethoric redundancy often salutarily vents itself by sanguineous discharges, in the various forms of hemorrhoidal, dysenterick, hepatick, and nasal fluxes. Excessive menstruation in females will also occasionally afford a beneficial outlet in plethorick fatness. Lax bowels, an augmented secretion of urine, and copious perspiration, with pustular inflammations, will often prove somewhat remedial in cases of plethora.

If the plethorick state be not speedily relieved by suitable evacuations and dietetic abstinence, it will soon occasion visceral or partial repletions, which will prevail independently of the general fatness ; so that, when sufficient evacuations have been undergone for the relief of the general malady, still the local or partial plenitude will remain, and will require farther and more efficient management for its removal.

Thus the general plethora has a tendency to terminate in cerebral, pulmonick, hepatick, renal, uterine and splenick fatness or congestion. In these cases, the morbidly fat state deranges the function of the organ in which it occurs, producing mischief corresponding to the nature of the disorder it has occasioned.

From hence visceral plethora arises, and a general *venous* fatness, impeding a due refluence of the circulating blood to the heart. Thus not only will mechanical pressure and distension inflict manifold distress, but the circulating fluids will not undergo the various additions and subtractions that are necessary to their functional purity. The materials which the lungs should supply are too long withheld, and those which the intestines, kidneys and skin should subtract, are permitted unseasonably to remain. In this way serious injury may arise for want of a free, equable, and salutary circulation of the vascular fluids being effected.

General plethora, accruing from excessive nourishment, and insufficient bodily exertion, has a tendency to effect its own cure, by an impaired digestion and diminished appetite for food, consequent on the derangement of health induced by the morbid fatness.

If the digestive source of supply be interrupted, the opposite state to plethora will speedily ensue,—a state of inanition will supersede that of morbid plenitude. But this denial of nourishment does not improve the condition of health, inasmuch as the visceral plethora that arose during the general fatness, still remains with impeded or embarrassed function. The gastrick, arterial, hepatick, and other secretions, are also disordered or altered, either in quantity or quality, or in both, so that health may be said to be in a very deteriorated, complicated, and untractable state. In such circumstances of visceral oppression and disordered secretions, the excitability of the system becomes diseased, and liable to be morbidly affected by slight occurrences.

The common causes of fever, variable temperature, atmospheric impurity, marsh miasma, personal contagion, mental anxiety, &c. would readily be operative on a system broken down in its general strength, oppressed by visceral plethora, and farther disordered by a morbid state of the various secretions. Neither the healthful temperature issuing from the regular vital processes of the animal economy, nor the nervous energy generated by the undisturbed function of the brain, can exist amidst the confusion of local plethora and general debility.

It is difficult to imagine a condition of disease, into which more morbid circumstances enter, than in the venous plethora, that casts on the different viscera the dregs of refluent blood in its passage back to the heart.

The plethoric state has been also divided into the arterial and venous, as well as general and local. When the arterial division of the circulating system is more particularly filled, it would be speedily transmitted to the venous portion, by the contractile exertions to which the arteries would be excited by the stimulus of distention. The most powerful agent in inducing arterial contraction is distention, and this is the case in all

the tubular and visceral cavities in the human frame. If the venal portion of the circulating system could not receive the arterial blood as it is urged towards it, it would recoil on the heart, and quickly extinguish life. The stronger power being in the contractile action of the heart and large arteries, there is no impediment in the venous system but must give way to the propelling force. Arterial plethora, therefore, is not likely exclusively to obtain ; it must either partake of the venous plethora, and constitute the general plethoric state, or, by the transmitting energy of the heart and arteries, it must be converted into venous or local plethora.

Venous plethora commonly arises from deficient arterial action, by which the venous blood is not sufficiently propelled to enable it freely to arrive at the heart. During this delay the venous blood of the different viscera is retarded in its reflux, and liable, by detention and obstruction, to occasion functional and other mischiefs, in the organs in which it is unduly arrested.

Visceral, and other local inflammations, are examples of morbid plethora, and also of the increased action which portions of the arterial, and even venous, system are capable of assuming, independently of the heart. The congestive fatness that obtains in the viscera without active inflammation, often involves the whole system in increased action, producing the febrile state, which will continue, advance, or recede, according as the particular state of the affected viscus may be more or less exciting to the general system.

The cessation of an accustomed discharge will be followed by general plethora, which, if not seasonably remedied, may proceed to visceral or local inflammation, or even to fever, assuming a type in accordance with constitutional and accidental circumstances. Were not the animal economy invested with motive powers that are capable of so regulating the distribution of the circulating fluids as to prevent undue accumulation of them, partial or local plethora would be incessantly occurring, and the condition of life would be one of constant disease, rather than of uniform health.

As the vegetable economy is so contrived as to insure a definite course of living movements, for the purpose of at once constituting and characterizing the particular instance of vegetative organization, so is the animal machine endowed with every requisite for effecting the various ends meant to be accomplished by its institution. The deviations from this perfect standard are the diseases and infirmities of animal life. The causes of these degeneracies are sometimes unknown, but more frequently cognizable, and are objects of intelligible consideration.

It is in contemplating the natural and perfect condition of vital arrangements, that the altered or deteriorated states of

health can become sufficiently well known to admit of reasonable attempt for restoration. Vascular fatness, whether general or partial, is an unhealthy departure from the relative state that should subsist between the containing vessel and the contained fluid; and the necessary remedy for such an evil will be the renewal of the healthful proportions that have been lost. Too large a quantity of fluid occasions excessive distention, and cannot be transmitted in a way that is compatible with health; whilst too small a portion would not sustain the necessary tone and fatness for contractile action and vital energy.

The direct remedy for plethora is the abstraction of the redundant fluid that occasions it. This may be effected by adequate bleeding, intestinal discharges, augmented urinary and perspirative secretions, and by the degree of dietetick abstinence that would adapt the nutritive supply to the exigencies of vital support, without yielding a quantity that would be superfluous, and induce a plethorick redundancy.

The irregular and immoderate excitement produced by alcoholick liquors, taken in the popular manner in which fermented compositions are drunk, may induce partial determination of blood to certain viscera, and thus occasion local plethora. The mischief resulting to health from capricious and irregular modes of stimulating the system, by eating and drinking either too large a quantity, or articles of a noxious quality, is incalculable. The pernicious influence is inevitable, and the ultimate consequence is often irreparable.

An unimpeded digestion is the sure groundwork of health, and the best safeguard against disease. To effect this salutary object, the diet should be so regulated as not to oppress and disorder the digestive organs, and, at the same time, to insure the extent of nutritive support that is indispensable to the healthy actions of life. After vascular fatness has been incurred, it soon acquires a habit of continuance, and will remain and perpetuate disorder, until relieved by appropriate treatment. A given extent of evacuation is almost absolutely necessary in all cases of plethora, whether general or partial, or whether occurring more particularly in the arterial or venous portions of the vascular system.

To the influence of an abstemious diet, may be added that of small and repeated bleeding, soluble bowels, and the institution of a drain by means of a seton or issue near the part that may be the seat of morbid fatness. If, for example, the brain, the lungs, the liver, kidneys, or any of the other viscera, should be oppressed by congestive plenitude, the effect of an external discharge, and the counter irritation attending it, would be likely to prove beneficial. When this mode of remedy is not adopted, dry friction, by means of a flesh brush over the oppressed ca-

vities, every morning and evening, during half an hour, as long as the skin will bear it, and continued for weeks or months, if required by the existence of disease, may be an efficacious substitute.

The popular dread in maladies is inanition, and the destructive weakening which is apprehended from it. This is very generally entertained. The notion, however, is fallacious; the opposite state, that of hurtful repletion, is a more frequent and efficient cause of mischief. Were the manifold evils of plethora either seasonably obviated by preventive measures, or, when incurred, unceasingly treated in a way that would be likely to overcome them, many of the worst and most unmanageable forms of disease would be restrained, and safely placed under the effectual controul of medical aid.

TAUNTON
Sept. 1. 1826.

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1. *The Medical Evidence, relative to the Duration of Human Pregnancy, as given in the Gardner Peerage Cause, before the Committee for Privileges of the House of Lords in* 1825–6. *With Introductory Remarks and Notes.* By ROBERT LYALL, M. D., F. R. S., &c. &c. Burgess and Hill, London. 8vo. 1826. Pp. 104.

2. *An attempt to prove, on Rational Principles, that the term of Human Pregnancy may be considerably extended beyond Nine Kalendar Months; comprising the substance of Evidence given in the Gardner Peerage cause, before the House of Lords in* 1825. By JOHN POWER, M. D., &c. &c. London. 8vo. Pp. 31. 1825.

3. *Case of Eleven Months' Pregnancy, with Observations.* By JAMES COLLINS, M. D., Liverpool. Edinburgh Medical and Surgical Journal, April 1826.

(Communicated by KINDER WOOD, Esq. Surgeon to the Lying-in Hospital, Manchester.*)

IT is a matter of great curiosity, that although the processes of Pregnancy and of Labour have been the subjects of obser-

* This establishment admits, annually, upon its books 4000 parturient patients. Had the fund left by Watson for establishing here a Lying-in Hospital not been perverted from its original purpose, 4400 would probably have been the corresponding number for Edinburgh.—EDITOR.

vation since the age of our first parents, and possess an intensity of interest capable of exciting not only the attention of the sage and the philosopher, but also of the general observer; yet many circumstances, capable of demonstration by the accumulation of facts, still remain sources of doubt and of dispute. That the period of gestation is *abbreviated* by many circumstances to which it is not necessary to allude, is an established fact; and also, that vigorous children are occasionally expelled at the close of the eighth month of pregnancy, or the beginning of the ninth, the previous history of these cases has been such as to satisfy the most scrupulous. From the frequency of this premature expulsion little surprise or particular attention is excited; but the question, whether gestation may or may not be *prolonged* beyond the ordinary period, under particular circumstances, is one of a deeper interest. Till the guardians of Allan Legge Gardner, a minor, aged sixteen years, made their successful claim for the Gardner title and estate before the House of Lords in 1825, in which they were opposed by Mr Henry Fenton Jadis *alias* Gardner, the subject had received little attention in our own country; nor, indeed, can we say that the evidence and statements given before the House of Peers, by the numerous professional gentlemen examined, has been such as to illustrate the subject, or to be satisfactory to the profession at large; since too often, in the place of well authenticated facts, and accurate physiological reasonings, we are put off with assertion and hearsay stories of yesterday. The evidence given by the females is scarcely worth the trouble of a perusal. But if the mass of evidence has not established the affirmative or the negative of the proposition, it has at least shewn us how lamentably deficient we remain, so far as regards the precision of our knowledge, upon several most important points connected with the evolution and expulsion of the fetus.

A consideration of the question, Whether gestation may be prolonged four, six, or eight weeks, or longer, is of so much consequence to society, affects so essentially the legitimate succession to property, honours, and influence, and occasionally involves so largely the honour and peace of individuals, that we should have esteemed it fortunate had the inquiry before us placed the subject upon a more satisfactory basis. It must be allowed, in excuse, that it is one of great difficulty; that there are no symptoms by which we can decidedly demonstrate the precise period of impregnation, nor can we infer this period from the commencement of labour; for if gestation is never prolonged beyond the forty weeks, as is asserted by Mr C. M. Clarke *, yet we know, that the process is liable to be too early

* Forty weeks I should say is the extreme time.—Vide C. M. Clarke, Evidence, p. 3.

and unnaturally terminated by the influence of accidental causes, previous to the completion of the full time.

Although this subject has occupied the attention of medical men, philosophers, and the most eminent civilians from the earliest times, yet at no period was it so warmly argued as in France from 1764 to 1767. The source of this very learned, acute and ingenious controversy, was the case of a female whose husband died ten kalendar months and seventeen days previous to the birth of a child, and eleven months and a half after the husband had been attacked by a gangrenous disease, which destroyed him, and after which attack the wife had never lain down in his chamber. The following question was placed in consultation *, "Can the period of gestation in the human subject be prolonged to the eleventh or twelfth month inclusively, or even beyond?" The affirmative was learnedly argued by A. Petit, Le Bass, and others, in numerous tracts. To their opinions and arguments many of the most eminent physicians and surgeons of Paris placed their signatures; among these we recognise the names of Petit, Raulin, Moreau, Ravenet, &c. &c. well known by their writings and discoveries. The negative was as anxiously argued by Louis, Bouvart, and others, to whose opinions Morand, Foubert, Barbant, De la Faye, Bordenave, &c. &c. acceded. All these were men whose brilliant reputations formed the ornament of the French Academy. In considering this question, sources of deception, arising out of the imperfect knowledge of the female herself, must always be a ground of error. It is not unfrequent for females to state in consultation that they have advanced two or three weeks beyond their expected time; but we have generally reason to conclude that they fancied themselves pregnant before they were so in fact. Under more unfavourable circumstances the motives which induce deception and concealment have the deepest influence. Nevertheless, there is a point which is popularly esteemed the full period of a woman's gestation, under ordinary circumstances, and this period, we agree with Gooch and others, to be nine kalendar months, or about 274 days. In the evidence before us †, it is variously stated, the extent of the variation being not less than fifteen days.

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* Vide Nouvelles Obs. sur les Naissances tardives; suivies d'une Consultation de celebres Medecins et Chirurgiens de Paris. Par M. le Bas. Paris, 1755, p. 4.

† The various opinions given by the medical evidence stand as follows:

265 to 280 days,—Granville, p. 25.

274 days, or nine kalendar months, allowing scarcely thirty days and twelve hours to the month.—Gooch, p. 16. Conquest, p. 40. Chinnocks, p. 73.

271 days.—Dr D. Davis, p. 21.

From incidental remarks scattered through the writings of the Roman poets, it appears, that the period of gestation was considered to be ten lunar months, which gives fifteen days more than the most liberal of our own time allow as the usual duration of pregnancy.

" Jamque decem menses, et puer ortus erat."
Ovid. lib. 5. Fast.

" At illa, quam compresserat,
Decimo post mense exacto, hic peperit filiam."
Plaut. *in Cistellaria*, Act. i. sc. 3.

" Virgo ex eo
Compressa gravida facta est, mensis hic decimus est."
Terent. *in Adelphis*, Act. iii. scen. 5.

Although the Romans made use of the Julian year, consisting of 365 days, in general computation, nevertheless, in these calculations it is evident they made use of the lunar instead of the solar month, as appears from Ovid, lib. 5. Fast.

" Luna novum decies implerat cornibus orbem,
Quæ fuerat virgo credita, mater erat."

The lunar year, used by the Greeks, the Jews, and the Arabians, consisted of 354 days, divided into twelve equal months, making twenty-nine days and twelve hours in each month, and giving 295 days in ten months, the term of the child remaining in utero. This can only be reconciled with modern facts and observations, by inquiring into the means which females adopt in counting the duration of their pregnancy. The period from which they commence to mark conception is not established upon any fixed data, but is arbitrary; nor, according to the nature of the circumstances, and of the process, can it be considered otherwise than as an inference; and hence errors are frequently made in estimating the time at which labour pains are expected to commence. Females, *by marking the intermediate space betwixt the last menstrual access and the superseded period*, endeavour to approximate, as near as possible, to a correct reckoning, and this is the most common and the most certain mode of contemplating the period of the expected labour. But we have reason to know that there are individuals who begin to count from the time of the cessation of the catamenial effusion, and others who do the same from the time at which they perceive that the menstrual discharge has failed in its appearance. By the former method, time is occasionally added; by the latter, time is occasionally lost. It is by contemplating this variety in the

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273 days.—Blegborough, p. 9.
273 to 280 days.—Sabine, p. 53. Denison, p. 64.
280 days, or forty weeks.—C. M. Clarke, p. 2. Pennington, p. 14. Merriman, p. 57. Hopkins, p. 65.

mode of counting, that we are able to offer a probable solution of the popular feeling among the Romans, that the impregnated female carried her child ten months. We have no information by which we are enabled to ascertain from what period these females commenced to reckon, but we can perceive, that if they did so from the disappearance of the last menstrual secretion, they would add fourteen or fifteen days to the forty weeks, making the term of utèro gestation consist of 295 days, which is exactly ten lunar months. We must observe that this period of ten months, specifically mentioned by Terence, is translated nine months by Madame Dacier, and forty weeks by Sir Roger L'Estrange *.

Being desirous to ascertain the popular method of dating pregnancy, we made our inquiries of twenty married females, who had borne children, as they presented recommendations successively at a large lying-in charity. The result was as follows :

Sixteen considered nine kalendar months as the full period which females carry the child, previous to the access of labour.

Two considered forty weeks as the full term.

One had great difficulty in counting, in her own person, although she had borne twelve children, because the menstrual secretion had always been very irregular.

One had no idea how long females usually go with child. Of the first sixteen, ten allowed themselves two weeks after the disappearance of the catamenia; after which time they began to count the nine kalendar months. Four commenced counting from the time of quickening, and carried the child four months and a half afterwards, and considered themselves to be half advanced when quickening took place. One female stated herself to count from the time she failed her monthly term. And one counted nine kalendar months from the cessation of the regular discharge; and, at the time of admission, considers herself to be one week beyond her time. Of the two who allow forty weeks as the full term, one commences to count one week after the disappearance of the usual coloured discharge, and the other two weeks after the same circumstance.

It appears from these statements, that nine calendar months

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* " Virgo ex eo
Compressa gravida facta est, mensis hic decimus est."
Vide Terent. *Adelph.* Act. iii. scene 5.

" La fille se trouve grosse,
Elle est dans le neuvieme mois."
Vide Les Comed. de Terence, par Mad. Dacier, *Les Adelph.*

" The young woman proved with child upon this;
Has gone her forty weeks."
Vide Terence's Comedies made English by Echard and L'Estrange, p. 202.

are popularly considered the full period of pregnancy; and that two weeks are most commonly allowed, after the cessation of the catamenia, before the pregnancy is accepted in memorandum. It appears also, that four in twenty reckon from the time of quickening, which they state to take place at four months and a half; and that, in one alone, the monthly discharge was so irregular as to furnish no data; which circumstance is commonly the case when females bear children in quick succession, and become pregnant during the process of suckling *. Although Beck † states, that "females usually calculate from the time when the menses disappear," one only in the above list commenced her observations from this period, and one from the time at which the arrested discharge ought to have appeared.

If we were in possession of any symptom or symptoms by which the moment of conception could be ascertained, we should be essentially assisted in our inquiries not only as to what may be considered the usual period of gestation, but also as to the possibility of this period being protracted. To this part of the subject, the attention of counsel was assiduously pointed. "Does it happen to you to have been consulted in cases where you can ascertain the day of sexual intercourse, on which your reasoning was founded ‡?" We are told in reply, that "it is not unusual to be sent to by ladies who have felt a peculiar sensation, have fainted, and have been extremely ill."—"They will declare certain sensations, by which we know that conception has taken place, and is the cause of those feelings which they represented to us." We should have been extremely happy had these sensations, as detailed by patients to Dr Blegborough, been reduced into words; but although he states, at page 13, that he has described them, we look in vain through his evidence for the detail. Dr Conquest || is rather more particular: "An excessively irritable woman, physically and mentally, affirms most confidently that she invariably suffers much constitutional disturbance within one week after impregnation." Blundell¶ states that the day after a prolific intercourse, "there was a good deal of irritation," which he could not describe more distinctly than

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* Women are constantly becoming pregnant whilst performing the duties of nursing, when they do not menstruate, and should not menstruate.—Conquest, *Evidence*, p. 51.

† Beck's Elements of Medical Jurisprudence. 8vo. London 1825. See also Merriman's Evidence, p. 60. who says, "I am generally in the habit of calculating from the time at which menstruation ceased. Mr C. M. Clarke, on the contrary, commences his calculation from the day when he supposed that a woman ought regularly to have menstruated."—*Vide Evidence*, p. 8.

‡ Vide Dr Blegborough's Evidence, pages 10. and 13. Dr D. Davies also speaks of these sensations without any farther explanation.—*Evidence*, p. 24.

|| Vide Dr Conquest.—*Evidence*, p. 45.

¶ Vide Dr Blundell.—*Evidence*, p. 75.

by saying, " that they were symptoms of irritation about the bladder, and the parts adjacent." The want of precision in these statements must strike the most unconcerned reader. Certain sensations, constitutional disturbance, symptoms of irritation, are expressions which in reality have no meaning, as they stand thus unconnected with further physiological or pathological views. The symptoms said occasionally to occur upon a successful communication, are thus enumerated by Brenner *: " Eo referunt semen retentum, incredibilem voluptatis sensum in utroque sexu, dolorem in fœmina, et quasi convulsionem circa umbilicum, inflationem et calorem vagum abdominis, qui e vestigio coitum sequitur, horror et frigus, anxietas et moeror, denique orificium utcunque clausum." But we know too well that if these symptoms do occur, they are so rare, and so ill defined, as seldom to attract the notice of the female; and we are justified in asserting, that there are no peculiar sensations occurring during or immediately after communication, by which the female, or her professional adviser, can decidedly pronounce that she has conceived. When the system begins to sympathize by its febrile action, and individual organs also, as the stomach, with the increased vascularity and nervous excitement of the uterus, and its appendages, ladies begin to suspect the consequence, and attention is immediately drawn towards the period of the succeeding catamenial effusion; but the whole is only matter of suspicion; nor can we perceive any means by which a positive conclusion can be arrived at, except by attaining a knowledge of cases where a single coitus, ending in pregnancy, has taken place in the interval betwixt the cessation of the menstrual discharge, and the period at which it ought naturally to have returned. There are few medical men who will commit themselves by a positive opinion as to the existence of pregnancy in any case upon which they may be consulted, from a consideration of symptoms alone; nor until they are enabled to ascertain its existence by the act of touching; and this not more early than the termination of the third month. It is well known how nearly ovarian and uterine disease simulate pregnancy, and how often pregnancy has been mistaken for these affections. Certain abdominal sensations and constitutional derangements have even been mistaken for the act of quickening, as is known to have been the case with Queen Mary of England.

If pregnancy, even at the close of the third month, is thus ill defined, the moment of conception must be more so, except under favourable circumstances. Sensations, the effect of concep-

* Vide Brenner, Dissertatio de fallacia signorum in Graviditate, in Schlegel. Sylloge ad Artem Obstetriciam spectantium, vol. i. p. 586; and also Gardien, Traité complet d'Accouchemens, tom. i. p. 483, &c.

tion occurring shortly after the fact, can only arise from the general constitutional impression, which must shew itself by constitutional symptoms, or from local feelings, originating in the actions commenced and advancing in the ovaria and fimbriæ of the fallopian tubes. As the vascular action of the womb, and the decidual formation of that organ, become necessary in consequence of the ovarian development, they cannot be taken into account as a source of sensations marking the moment of impregnation: they can only be considered as a source of symptoms marking the existence of pregnancy at a later period.

Whether any distance of time intervenes betwixt the act of sexual intercourse and the result, conception, may admit of doubt, inasmuch as it is incapable of demonstration in the human subject. By Drs Blegborough *, Conquest, and Merriman, this question was answered decidedly in the negative. By Dr Granville it was answered with doubt. The experiments of Saumarez † most decidedly prove that in rabbits the impregnation of the ova does not take place *in actu coitus*, but that a considerable time intervenes. We could have wished this part of the subject had been more largely investigated. In considering the question, the parties could only have reasoned from the analogy of inferior animals, which, in the absence of better facts, must be the next most legitimate source from which to draw an inference. It will be cogent to our subject if we state a few circumstances relating to conception, in as concise a manner as possible.

Our knowledge of the phenomena of impregnation have been chiefly drawn from experiments upon animals, and the careful examination of such healthy, or irregular, or diseased actions, as opportunities have furnished us with from time to time. The ovum, consisting of the rudiments of the embryo, enveloped in its peculiar membranes, is originally found in the ovarium; when impregnated, it bursts through its ovarian coverings, is seized by the fimbriated extremities of the fallopian tube, and conveyed down that canal into the uterus, where it arrives at maturity; and, at the expiration of about nine calendar months, is expelled. In the absence of *æstus*, the fimbriæ of the fallopian tubes lie loose and flaccid upon the ovarium or contiguous organs; during æstus they embrace the ovarium with so much energy, that they occasionally rupture before they can be separated; they embrace the ovarium thus vigorously for the purpose of receiving the impregnated ovum, as it makes its way through the ovarian coverings.

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* Vide Dr Blegborough's Evidence, p. 11. Dr Conquest's, p. 52. Dr Merriman, p. 62; and Dr Granville, p. 26.

† Vide Saumarez, System of Physiology.

The origin of the ovum in the female has been a subject of long but unsuccessful inquiry. Like all those inquiries, the objects of which are a knowledge of first principles, it has been useless. There is a point in physiological subjects beyond which human intellect and human means do not penetrate. The moment facts become cognizable to our senses, we can commence a chain of reasoning upon them. That the ovum exists in the ovarium previous to impregnation, we infer from this being the case in oviparous animals, and also because ova, in a state of partial evolution, have been found in the ovaria of virgins. Corpora lutea, which are the vestiges or remains of the calyx of the ovum, still remaining in the ovarium, have also been found where the parties have been known never to have suffered abortion or sustained labour.

Saumarez took a virgin rabbit that had the æstus upon her, and excited her highly by the presence of the male, but prevented sexual intercourse. He killed her, and found the vagina, uterus, ovaria, and fallopian tubes gorged with blood. The ova in the ovaria were partially evolved, and more distinct than usual, although there was nothing like separation from the capsule. This experiment shews, (and it may be connected with the above statements), that high excitement alone will partially develope the ovum.

Dr Haighton took a full grown virgin rabbit, in heat; he laid open the belly, and cut away a portion of the fallopian tube; the two separated portions were returned, and the wound healed. In a month afterwards she received the male, and in ten days was killed and opened. There were found corpora lutea in both ovaria. Those found in the mutilated side did not at all differ from the same remains on the perfect side, but they were unattended with fetuses in the uterus of that side; whereas in the perfect side, there were as many fetuses as corpora lutea. This experiment proves that the ovum may be developed, and escape from the ovarium, in consequence of sexual intercourse; but that, being unfecundated, in consequence of the injury done to the tube, it dies; or, in other words, possesses no farther power of developement.

The day after a doe had received the male, Mr Cruickshank opened the abdomen, and tied the left fallopian tube; fourteen days afterwards, he killed the animal. Ova were found in the sound side of the uterus; no ova were found upon the mutilated side. Similar experiments were made by Dr Haighton, half an hour, an hour, four, six, twelve, twenty-four, and forty-eight hours after the embrace, with similar results. These experiments prove that the impregnation of the ovum does not take place *in actu coitûs*, but that a considerable time intervenes.

That impregnation takes place within the ovarium, or imme-

diately upon the escape of the ovum, seems to be shewn by the above facts, and also by the circumstances attending extra-uterine pregnancies. It would also appear, that the office of the fallopian tubes is not merely to convey the ovum from the ovarium into the womb, but that they are the channels by which the *aura seminalis masculi*, or whatever other term we choose to use, is conveyed to the ovum which it fecundates.

In examining this evidence, it has gratified us much to observe the acuteness with which counsel varied their topics of inquiry, in order to arrive at this result. "Is there any general opinion to which belief is given amongst practitioners as to the time at which impregnation may take place * ?" Dr Merriman states the general belief (he thinks) to be, that it takes place soon after the menstrual period; and, accordingly, he is in the habit of calculating from the time at which the discharge has ceased. Dr Lyall, in a note, says, it is more probable that conception takes place a short time previous to the next expected menstruation. The popular opinion upon this subject is, that there exists a greater probability that the intercourse will be fertile immediately previous to the commencement of the menstrual access, or immediately succeeding its cessation. "Conceptionis vero tempus esse, vel incipientibus vel cessantibus menstruis medici tradiderunt, quia tunc aperta sint vasorum oscula, ex quibus uterus exasperatus melius semen retineat † ;" and this impression prevails to the present day. It is most probable, that impregnation may take place at any point of the interval betwixt the menstrual terms. The observation of Roderic a Castro upon this part of the subject is pertinent and conclusive: "In eo tamen videtur peccare hæc ab Hippocrate, Galeno et reliquis, tum Græcis, tum Arabicis medicinae scriptoribus concepta, et a neotericis omnibus probata opinio, quod dicat mulieres non concipere, nisi cessantibus aut incipientibus menstruis; hoc siquidem e diametro pugnat cum sacris literis, Levit. 15, ubi interdicitur mulieri accedere, ante numeratos septem a sua purificatione dies, quod ipsæ religiosissime observabant, et tamen fœminas Hebræas fecundissimas fuisse constat." When we consider that no animal menstruates except the human female, it will appear that the secretion is not necessary to conception, as a principle in animal life; and, when we connect this with the fact, that none but the human female is disposed to communication at all times and periods; that all other animals have their access of uterine excitement shewn by secretions sensible to the olfactory nerves of the male, we may perhaps be justified in presuming that the occasional excitement of animals stands in the same relation to the

* Vide Evidence, p. 60.

† Vide Rod. a Castro, de Universa Muliebrium Morb. 3d edit. 1619, p. 30. See also Schurigius, de Virginitatis, &c. &c. 1729, cap. ii. p. 223.

ovarian and uterine function, that the periodical recurrence of the catamenia does in the human subject.

In contemplating sources of protracted labour, Dr Pennington * was asked, if he conceived it possible that any agitation of the mind could protract delivery beyond the period he had just stated (of three or four days); which question he answered in the negative; nor did he think that labour could be protracted beyond this period by any particular disorder, nor by any mode of treatment †. Dr Conquest states, that he has frequently seen powerful mental emotion, or any physical cause, bringing about the death of the child, protract labour several days; and that it is not uncommon for labour to be interfered with, and protracted several hours, by the occurrence of mental agitation and distress. In one instance, Dr Conquest states, that he knew the process of labour laid down, in consequence of this cause, and not resumed till a month had elapsed. Perhaps there is nothing which more powerfully tends to induce a premature expulsion of the child than mental anxiety and agitation. But these circumstances, when occurring in labour, frequently have a contrary effect, and suspend the uterine action. We must appeal to the experience of every gentleman engaged in practice, how frequently labour-pain is suspended by the simple announcement of his arrival, or expected presence. When this suspension of uterine action takes place, in conjunction with a freely dilated os uteri and protruding membranes, it will commonly recur again after the lapse of two or three hours; the enfeebled and relaxed state of the orifice of the organ exciting the expulsatory action of the fundus and body. But, when the os uteri is situated high in the pelvis, with very little dilatation, such suspension may continue an indefinite time; and few experienced practitioners will be disposed to wait the recommencement of labour. In a case related by Chapman ‡, he found "the mouth of the womb fairly dilated, even enough to have allowed the hand, a large water gathered, together with other usual symptoms of labour. Her pains, indeed, were but short and imperfect; upon which she was ordered to bed, to take a composing draught, and keep quiet. Her pains, by this means, were wholly abated; the os tincæ, in some measure, contracted itself, and she went three weeks longer, which was her full time, and then had a kind and speedy delivery." Dr Power § thinks he has seen a case in which labour has apparently come on, if not commenced, at what the woman has believed to be her proper time, and it has been postponed nearly a month after that time.

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* Vide Evidence, p. 14. † Evidence, p. 47, 48.

‡ Vide Chapman's Treatise on Midwifery, p. 80. London, 1735.

§ Vide Evidence, p. 82.

He even states further, that sometimes labour has come on, the membranes have been ruptured, and yet the labour has been deferred nearly a month. Dr Lyall, in a note, says, these cases must be very rare; and that some practitioners and lecturers think such an occurrence impossible. We have had occasion to see a case where the os uteri was dilated the breadth of a crown-piece, with the presence of strong labour-pain, and the bag containing the waters presenting firm and tense during every pain; nevertheless, this uterine contraction ceased, and the patient carried the child three weeks longer. We cannot agree with Dr Pennington, that there is no mode of treatment which can suspend this action; or, in other words, suspend a labour beyond two or three days. Surely the injudicious use of large opiates has never been witnessed by him as they are frequently exhibited, by female midwives, for this special purpose, in order to gain time, when they find their professional engagements pressing too hard upon them. We have occasion to know that this is a very frequent source of protracted labour, and that it does occasionally so much enfeeble the expulsive effort, as to prevent its effective recurrence. Cases occasionally occur where it is of importance to delay the access of labour, or to suspend its first appearance; and the means are precisely those we employ to arrest the process when prematurely commenced, rest, light diet, a judicious loss of blood, and the regulated exhibition of opiates.

In examining this evidence, we cannot fail remarking, that questions, *relating more particularly to a protracted pregnancy*, have been answered by statements applicable to protracted labour alone *. The effort of labour is one which the system can only support for a limited period; but, when labour has been commenced, and is again laid down, the inconveniences sustained by the patient are simply those necessarily attending the close of pregnancy. This distinction has been accurately made by Dr Conquest. The length of time during which labour may be protracted varies in different individuals, according to their strength, the violence of the uterine effort, and the resistance offered to the progress of the child; management of the patient also has a great influence over the capability of supporting a prolonged labour. All those cases bear protraction ill, where an endeavour is made to support the process in the early stages, by the exhibition of artificial stimulus, or to accelerate it by frequent examinations. When parturient patients become exhausted they are found feverish and irritable, and the soft parts shew the mechanical injury they have been subjected to; if the os uteri has been very rigid and unyielding, or the supe-

* Vide Minutes, p. 10. et 14.

rior aperture of the pelvis much contracted, so as not to allow the head to advance, rupture takes place in the body of the uterus; but if the head has been lying long in the canal of the pelvis, the injury is received by the cervix or os uteri, the bladder, or the vagina. In cases where females die undelivered, rupture of some of these organs is generally found. Although laceration of the womb is so very fatal an accident, yet patients do occasionally recover, and, in default of a natural or artificial delivery, it is the only process by which a chance of recovery can be given to the patient. When the uterus orthe vagina is ruptured, and the child escapes into the cavity of the abdomen, the labour may be considered to be completed, although unnaturally and unfavourably; the child is expelled from its proper matrix, and the management of the patient can only be further considered in a medical or surgical point of view.

We were much surprised by the statement of Dr D. Davis, that, in his own practice, he should not allow, as a general principle, a woman to remain in labour more than about thirty or forty hours, if the labour was decidedly active; and that this is going beyond what would be generally safe. We conceive the opinion to be one which should be noticed, and to have a tendency to lead to the unnecessary and premature use of instruments,—a practice as much to be deprecated as their tardy application. If Dr Davis will examine Merriman's work, he will find a table of first labours, with a natural presentation, and completed without extraordinary assistance, shewing that one case in fourteen occupied from thirty to forty hours; that, about one in thirty-two occupied from forty to fifty hours; and that one in forty-five occupied from fifty to sixty hours. For a justification of the use of instruments we are not to look to the duration of labour, but to its effects upon the constitution, or upon the organs themselves.

The arguments opposed to the opinion, that gestation may be protracted beyond nine kalendar months, may be stated as follows.

That nature is constant and unvarying in all her operations; that the developement of the seeds of vegetables, the eggs of oviparous animals, and of the young of viviparous animals, require a determinate time; that the term of pregnancy of woman ought to follow, and does follow, the same fixed law *. That cases of supposed protracted gestation originate in incorrect reckoning, arising from error in judgment, or wilful deception; that the symptoms of pregnancy in the early months are notoriously uncertain, and that a real pregnancy, after two or three months of error, may give all the appearances of a prolonged

* Vid. Astruc, Traité des Malad. des Femmes, tom. v. p. 285.

case *; and further, that the impregnated ovum may die *in utero*, and be expelled without any sensible action; whilst the individual may become pregnant early, and proceed to the full time, giving every mark of a prolonged gestation †: That there exists a mutual dependence and relation betwixt the functions of the womb, the placenta, the fetus and the breasts; that milk is formed in the breasts of the mother, as the organs of nutrition, secretion and respiration, are developed in the child ‡: That the evolution of the fetus in the womb goes on without interruption, and the term of its expulsion depends absolutely upon the developement of its organs; that, if it remains in the uterus much beyond the ordinary period, it must necessarily acquire a volume so great as to render a natural birth impossible. We should consider the last to be the most formidable objection; knowing the exact relation which a natural sized fetal head, at the full time, bears to a well formed pelvis; and that it can only be propelled through the pelvis favourably, by undergoing certain changes of position in its descent; knowing, as we do, that a diminution of space in the superior aperture, of half an inch, frequently compels us to use the forceps, whilst a lessening of one inch and three quarters will frequently require the application of the perforator, and the destruction of the life of the child; and as diminution in the apertures of the pelvis is only equivalent to the increase in bulk of the child's head, it is apparent, that the child cannot go on progressively increasing in its magnitude, beyond certain limits within the cavity of the womb, and be expelled by the uterine action through the natural passages. This view was slightly touched upon by counsel, but that it was not further pressed by the advocates, for a fixed and determinate period of pregnancy, is matter of considerable surprise.

These statements have been met by those who allow the possibility of the process being occasionally protracted; and they urge, that the laws of nature are not fixed and immutable, inasmuch as monstrous productions are deviations; that the causes which derange natural actions are numerous and frequent, and that observations upon some quadrupeds, particularly cows, shew that they vary several weeks in the time which they carry their young §; that the developement of the womb may be slow from a want of irritability and sensibility in its fundus and body ||, whilst the evolution of the fetus and membranes may be

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* Vid. Astruc Traité des Malad. des Femmes, tom. v. p. 305.

† Louis, Memoire sur les Naissances pretendues tardives, p. 59, 61. 1764.

‡ Louis, ut supra, p. 53.

§ Tessier, Mem. de l'Acad. des Sciences. Paris, 1817.

|| Roussel, Essai Physique sur la Femme, ch. vi. p. 185.

also retarded from irregularities, feeble energies, or disease *; that labour has been suspended a month after the os uteri has been found freely dilated, and, in many cases of prolonged gestation, an expulsatory action has come on at the close of the ninth month, and been again laid down †; that loss of blood, enfeebling function, and malposition of the womb, by removing pressure from the os uteri, tend to postpone labour ‡; that, although the child may continue to acquire bulk in a protracted pregnancy, yet this can have no effect in inducing labour, since the child is expelled by the action of organs over which it has no controul, and which it cannot retard or accelerate; that its increased magnitude, if granted, can only be a cause of tedious or difficult labour.

Dr Collins § has lately published a case of eleven months' pregnancy, which we venture to introduce to the attention of our readers. The whole of this history, unto the eighth month, is the personal statement of the female. She commenced counting from the close of the month subsequent to the last appearance of the menses; thus avoiding the frequent error of dating from too early a period. She had been the mother of several children, possessed a good understanding, a moral and religious character, and had no motive to deceive her medical attendant, or others, by false statements. She had experienced all the symptoms of pregnancy in the order and degree in which they had presented under similar circumstances, with this important exception, that she quickened when the sixth month was considerably advanced. In order to cultivate a knowledge which touching gives of the stages of pregnancy, Dr Collins effected an examination *per vaginam*, and found the cervix remarkably high, scarcely tangible, and with difficulty distinguished from the body of the uterus; the fetus bounded from the finger upon an impulse being given, and fell down again; as the end of the ninth month was presumed to approach, the head was found lower, larger, and more solid to the touch; the os uteri, in some degree, open, flat, and stretched. A day or two afterwards pains came on, and continued nine or ten days, about which period a considerable quantity of glairy mucus flowed from the os externum; every night, during this time, symptoms came on which are generally considered the precursors of labour. Three or four weeks elapsed, and those symptoms gradually diminished or varied in the regularity of their return; an examination was again made, and the parts found as they were at the close of the

* Le Bas, Nouvelles Obs. sur les Naissances Tardives, p. 53.

† Chapman, ut supra.

‡ Evidence, Dr Conquest, p. 41.; Dr Power, p. 85.

§ Edinburgh Medical and Surgical Journal, April 1826.

ninth month. Two months almost passed since the expiration of the ordinary term of pregnancy, without any greater probability of the access of true labour, when Dr Collins was sent for, and, in two hours, a fine and active boy was expelled. The labour was perfectly natural; for the membranes did not give way until the head was almost at the extremity of the passage, resting upon the perineum, and about to be born. In size the child seemed to exceed the ordinary standard; but he was not weighed.

In examining this case, we have to remark, that we could have wished to have seen precise dates: they have a tendency to strengthen all statements of extraordinary cases. We should also have been happy to have had a detail of treatment and management during the last two months. The husband of this female applied to Dr Collins in the beginning of October, stating, that labour was expected to come on at the close of the month, or the beginning of November; it would appear, therefore, that she wanted about one kalendar month of her time, although she is stated vaguely to have been in the eighth month. She is also stated to have quickened when the sixth month was considerably advanced; an unusual circumstance, and tending to throw doubt upon the accuracy of her judgment with respect to her actual pregnancy at the period she commenced counting, and may even induce us to infer, that this mistake was not less than a month, if not more, since quickening usually takes place at the beginning or middle of the fifth month. With respect to the precursory symptoms of labour which Dr Collins notes, the tenesmus, frequent micturition, and pains in the legs; they are inconveniencies frequently found in the two last months of a natural pregnancy, especially in females who have borne many children, who are of a relaxed habit, and where the anterior part of the uterus is feebly supported by the abdominal integuments. The pains also described are such as we occasionally see inducing great distress to the patient, and which frequently become aggravated at bedtime, as in Dr Collins's patient. We have had numerous opportunities of witnessing these pains occurring several weeks before labour, exciting great anxiety and expectation; and we have generally seen them relieved by moving the bowels, and giving full opiates. The true labour-pain commences slightly, and gradually increases in force and frequency; the spurious, irregular, or false labour-pain, is sharp and transient, arising occasionally in the back *or belly*, directing its course to the pubes and thighs, and varying in force and direction. These spurious pains are occasionally attended with slight dilatation of the os uteri, and consequently by the falling away of the mucous plug previously filling its orifice. Although we are of opinion, that, in this case, gestation was prolonged, we

are far from agreeing with Dr Collins that it was extended to eleven months; and we would ask, How he can reconcile two months additional growth of the fetus with so very easy a labour?

The impossibility of ascertaining the period of impregnation, necessarily induces a corresponding uncertainty in calculating the term of pregnancy; hence females frequently mistake their reckoning, and it happens that they summon nurses three or four weeks before their aid is required. When this occurs, it arises from the female presuming herself to be large before she was really so, or from miscalculation, or from a prolonged pregnancy; most commonly from the first cause. We are in the habit of keeping a list of ladies who bespeak our attendance. To this list is constantly appended the period at which the parties expect to labour. In examining this for our present purpose, we find that individuals frequently do not demand attendance till three, four, and even five weeks have elapsed beyond the given period. The greatest mistakes we perceive to be made by young females in first pregnancies. The opinions given upon this simple subject in the evidence, are very vague and unsatisfactory.

Considering the subject simply as a physiological question, we cannot see why the term of pregnancy shall be absolutely limited and defined, since such an absolute perfection is never found in any other function. If it could be distinctly shewn that the process can be protracted one single week, there could be no difficulty in granting that such a condition of the organ might exist for a longer period. The entire obliteration of the cervix uteri may be considered the completion of gestation; any farther process must be dilatation of the orifice which constitutes labour. When the cervix is completely dilated, the fundus and body of the uterus commences a series of contractions, the effect of which is to hasten and complete the opening of the orifice, and the expulsion of the child. The child is never expelled without those contractions; which, therefore, may be considered a *sine qua non.* To the further retention of the child nothing more would appear to be necessary than an inaptitude in the fundus to assume contraction. Contraction of the womb may be vigorous and effective, and produce expulsion of the child; and yet, in some cases of twins, it may be laid down, and not resumed till one, two, or three weeks have elapsed. Le Bas* mentions a case where the second child was retained six weeks. Surely, in such cases, it must be conceded, that the second child

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* Une femme accoucha, Paroisse de Vornay, Dioces de Bourges, 1mo, d'un garçon à neuf mois revolus de grossesse; 2*do*, D'un autre six semaines après. Ils vecurent tous deux.—Vide *Le Bas, ut supra*, p. 84.

is carried beyond the full term, a concession sufficient to settle the question.

Dr Power, considering the difficulties he had to contend with when giving his evidence, arising from the peculiar nature of the subject, the necessity of conveying his sentiments in a brief and intelligible manner, and the want of preparation on his part; has thought proper, in a small pamphlet *, to define more accurately the doctrines he then advocated. After stating his reasons for thinking the term of human pregnancy may be prolonged beyond the ordinary period, he says, that it would be happy if a physiological explanation could be advanced, relative to the nature and action of the causes which give rise to protraction. This, he thinks, will be found in an investigation of the causes which excite labour at the natural period, since any interference in the action, on application of such causes, will necessarily tend to derange the functions to which they appertain. Dr Power states, that the mouth of the womb is more plentifully supplied with nerves than any other part of the organ, and possesses a proportionate higher degree of sensibility and irritability. The contractions of the womb, which constitute labour, he says, are excited in consequence of the mouth of the organ being irritated by its contents. At the end of gestation, the neck of the womb having disappeared, its contents come into contact with the sensible mouth, and stimulate it. An action is in this way excited, and is communicated by sympathy to the muscular fibres of the womb, which, in consequence, fall into powerful contraction, and expel the child. This is the substance of Dr Power's doctrine of orificial irritation. He farther states, that mere opposition of the contents of the womb against its mouth, is not alone sufficient to produce labour: they must be applied to, or pressed against, the part with more force than the power of gravitation, or accidental contact can supply. This additional pressure is given by the insensible or permanent contraction, (which takes place previous to the demonstration of contraction by pain); which insensible contraction, he says, (p. 13.) *is, occasionally, sufficiently forcible to open to a degree the mouth of the womb, or to rupture the bag of membranes.*

It appears to us, that Dr Power lays too much stress upon irritation of the orifice simply; and that he overlooks too much the weakening of the os uteri by the progressive developement of the cervix. To produce contraction in any hollow muscular organ, it is sufficient to take off the action of its sphincter; this is shewn in passing a catheter into the urinary bladder, and also, by the circumstance, that paralysis of the sphincter vesicæ is

* *Vide* An attempt to prove, that the term of Human Pregnancy may be considerably prolonged, &c. &c. 8vo, 1825.

always succeeded by thickening of its muscular coat. Whilst Dr Power considers the contraction of the uterus, which takes place previous to the access of that strong action which is attended with pain, as only accessary to labour, by producing irritation of the os uteri, we consider it as a contraction similar in kind, varying only in degree from the uterine contraction, termed a labour-pain. But not only is an expulsatory action of the organ induced by feebleness of the mouth, but also by partial evacuation of its contents, as is the case when we rupture the membranes, for the purpose of producing premature labour. Violent contractions also take place at the close of the ninth month of extra uterine pregnancies, where the uterus has nothing to throw off, except a decidual formation. Dr Power states, that a strong confirmation of the truth of his doctrine, is, that labour comes on soon after the obliteration of the neck admits the contents of the womb into contact with its orifice; that, if the due pressure of the insensible contraction be now superadded, a deficiency of orificial irritation is followed by a deficiency or suspension of labour, the impression upon the orifice being too weak to keep up the action of the organ; and that, consequently, these circumstances are equal to retard the approach of parturition, or to suspend its progress: That the circumstances more particularly retarding the access or progress of labour, and therefore prolonging beyond the customary term the period of gestation, are, a deficiency of the insensible contraction—a want of sensibility of the os uteri—an oblique or improper situation of the os uteri—an unfavourable position of the child—and distortion of the pelvis.

Dr Collins *, in the paper before us, has given a theory differing from the one we have just been considering. He says, that the fetus is expelled at the close of the ninth month, because its size at that period is usually such as to cause a degree of distention and irritation of the uterus which occasions its parietes to contract; and to cause that action to take place, in the diaphragm and muscles of the abdomen, which is necessary to expel the fetus. Now, these contractions, he continues, it is evident, will depend upon the powers of sensation and extension of the organ. In an uterus, endowed with much sensibility, and little extensibility, it will not be necessary to produce the phenomena of labour, that the fetus should acquire that degree of developement which would be necessary in one of little sensibility and easy dilatation. The sensibility of every part, and particularly of the uterus, Dr Collins continues, is increased by disease, for example, by inflammation; whilst the power of di-

* Dr Collins, Edinburgh Medical and Surgical Journal, April 1826, p. 253, *et seq.*

lating is proportionally diminished. On the contrary, in an uterus that possesses much *humidity*, and consequently *relaxation*, the faculty of feeling becomes less, while that of extension becomes greater. In consequence of this little sensibility of the womb, and its greater power of extension, it will continue to grow beyond the ordinary period, until it has obtained that degree of developement necessary to excite the sensibility required for the contraction of the uterine and other muscles, and the expulsion of the fetus. These considerations, he says, demonstrate the possibility of a woman being eleven, twelve, or more months in a family way.

We do not conceive Dr Power or Dr Collins to have been very happy in searching the proximate cause of labour. Whilst individual parts of the function have been examined with a microscopic eye, and orificial irritation in the one case, and modifications of the sensibility and dilatability of the uterus in the other, have been made the chief agents in exciting contraction; the phenomena attending the progressive developement, and weakening of the cervix, and other circumstances presenting at the very commencement of labour, have been too little dwelt upon. But, perhaps, it may not be considered fair to examine Dr Power's views too critically, without a reference to his larger very ingenious work: this the length of the present article will not allow; the subject is, nevertheless, one of great interest and utility.

When the cervix uteri is completely developed or effaced, no farther change in the lower part of the organ can naturally go on, except that of dilatation of the os uteri. As the child still retains its vascular communication with the womb, it is probable that its growth, with that of its involucre, still continues. The changes which take place in the womb in the latter months of pregnancy, are chiefly dilatation of its neck; and, as this appears to arise from the growth of the uterine contents, a further continuance of the process must necessarily act upon the orifice of the organ, as a part of the lower and dilating portion, and which, as the weakest part, must dilate and open. The whole of the pyramidal shape of the inferior portion of the womb being removed, the head of the child falls down, and lies in immediate contact with the parietes of the organ, and takes its final position upon the superior aperture, which it partially enters, carrying the dilated cervix before it. In consequence of this assumption of position, by the head and lower part of the womb, upon the superior aperture, the abdomen of the mother falls, the child is more and more supported upon the bony fabrick of the pelvis; the tension of the abdominal integuments is taken off; the diaphragm has more room for its descent in respiration; the patient breathes more freely, and becomes lighter and

easier, by which her spirits and energy are strengthened for the great process she is speedily to undergo. This falling down of the burden, and a frequent micturition from pressure upon the bladder, are the marks of the proximity of labour. The os uteri at this time becomes soft, and assumes a disposition to dilatation; whilst the lining membrane of the vagina begins to throw a mucous secretion into the canal. The weakened and relaxed state of the cervix and os uteri, now described, allow the membranes distended by the waters to press downwards; the situation of the head also becomes a source of irritation; the just balance of parts is destroyed, and contractions of the muscular fibres of different parts of the womb take place so feebly as to be unattended with pain; the mucous plug which, for nine months, had filled the lower part of the cervix and os uteri, now falls away, and the membranes may be felt presenting, with a degree of tension, at the slightly dilated orifice. The process continues, and increases in strength and violence; the orifice of the uterus gives way before the contraction of the fundus and the pressure of the uterine contents, and the more feeble the resistance of the orifice becomes, the more the contractions or labour-pains increase in violence and frequency. We think this fact decisive, that labour-pain does not arise from orificial irritation, nor is it kept up by it; because the irritability of the cervix and os uteri must diminish as their resistance is destroyed, which takes place precisely in the ratio of the increase of the contraction. We think the proximate cause of labour will be found by attending to the *gradual and progressive weakening of the inferior portion of the uterus*, by the process of successive developement which it undergoes.

We must now take our leave of this interesting subject; and, although we confess that we have received much pleasure in the course of the inquiry, yet we have been much disappointed by the evidence which Dr Lyall has collected and presented. We are more strongly impressed than ever, upon perusal of the statements, with an idea how feebly are matched before a tribunal, the candid and gentlemanly habits of the physician, against the subtleness and professional imperturbability of the bar; and we are decidedly of opinion, that engagements of this kind should never be sought, nor should they ever be gone into, without a previous inquiry into the subject. In the course of this evidence, nothing has been elicited which could justify the Honourable House in deciding upon the cause, so far as the medical evidence had an influence, nor have we any data at present which would justify legal enactments. That inquirers, for the purpose of forming individual decisions, have occasionally rejected the possibility of a prolonged gestation, does not in itself

become any strong argument against the question. Decisions are no more than the enforcement of individual opinions, for the purpose of an individual right, and are as often deduced from a contemplation of moral circumstances, as a calm consideration of physical facts. But, if the legislatures of different ages and countries agree in similar enactments, this shews the reasonableness of the act, and the popular sentiment upon the subject.

On Morbid Disposition and Action. By Dr Kinglake.

The distinction of morbid disposition and action is laid in the passive and active conditions of vital power, with reference to health and disease. If the organic arrangement in its living excitement should be so circumstanced as to evolve the action of health, whatever may be the existing disposition to disease, it will not obtain, it cannot be manifested. The subsisting excitement is not of a character to develope and bring into effect the latent disposition to morbid action. The morbid disposition, therefore, is inoperative, and as long as its dormant state may be continued, it will remain inactive.

Morbid disposition differs from morbid susceptibility. The former is specific, the latter has a general existence. In the one, the disease is elementarily or covertly constituted; in the other, there is an indefinite liability, commensurate with the infirm and variable state of human life. Morbid disposition is intrenched on the healthy condition of vital power, where it acquires an establishment of a more or less passive nature. It forms an intermediate state between health and disease. It deteriorates the natural condition of vital power, and becomes an impending evil, liable to be rendered active by the application of adequate exciting causes.

Happily, morbid disposition, as an incipient state of active disease, is restricted by organic changes, that are a deviation from the natural state, and therefore not common. For morbid disposition to become fixed in undisturbed quietude, a variety of circumstances must concur, in a manner not likely often to take place. The natural state is an entire freedom from all that is morbid, whether in disposition or action. It is therefore reasonable to suppose that the inherent provisions for this condition are such as to secure its existence against the ordinary influence of diseased tendencies.

Generally speaking, the vital power of animal life is fully protracted by the various conditions of health, into which not a

trait or vestige of disease enters. But for this natural defence, existence would not be tenable, and unhealthy encroachments would be so constantly making, that life itself would have no definite or lasting station.

The organic fixation imparted to life and health is of a nature that does not admit of being readily subverted. By the same tenacity of principle that the general and particular agencies of matter are secured, are the laws of animal existence upheld and sustained. Organic changes may be either structural or functional. In the former case, the fabric is altered; in the latter, the action only of that fabric. Animated fabrics are variously constituted in respect of vital action, indeed so much so, that it may be truly affirmed, that no two individuals of the human species are organized exactly alike. It is enough that a radical difference should exist, to afford a sufficient explanation of the vast variety obtaining in the construction and vital action of the human frame; resemblances of the most imposing closeness exist in material arrangements, but nature furnishes no fac-similes. Similarities scarcely to be distinguished occur, but strict identities would be incompatible with nature's uniform variety in all the general and specific arrangements of matter.

It is with the interior of material arrangements, as in the instance of organic structure, that the physiologists and medical philosophers are chiefly concerned. It imports less what is effected on the surface than that which is going on in the minuter disposition of parts, in which life is at once generated and rendered active. The varieties occurring in those situations, are the grounds on which to estimate the organic conditions of life, health, and disease. The divers modes and gradations of organic construction will furnish states of vital power and action, that constitute the different kinds of susceptibility for being affected by the various agencies of life, denominated temperaments.

The temperamental condition of vital power, is essentially connected with constitutional organization, of which, indeed, it may be regarded as a direct offspring or emanation. In this state or condition of vital power resides any exciting morbid disposition, which may be more or less fit for becoming active, according to the organic circumstances with which it may be associated. This tendency or disposition to disease, may be either originally inherent, hereditarily transmitted, or accidentally acquired. In either case, the active effect would not be essentially different, in as much as the radical condition of vital movements would be similar in all. No reasonable calculation can be made as to the practicability of extinguishing morbid disposition. Not being developed, it is too recondite to be assailable. It is not accessible to any conceivable influence, and

therefore cannot be annulled. Hence it may justly be considered as an evil in embryo, with the possibility of its never becoming active.

How the morbid disposition endures is among those arcana of nature that may invite abundant speculation without much probability of any rational solution. Communicated diseases of every description, have their passive or inactive interval, during which time changes are working, that finally bring the diseased state into action. But in these instances, the morbid disposition is too strong and influential to admit of being kept at bay. It forces itself into active existence, demolishing in its diseased career all the checks and boundaries of health, which oppose to the weaker or more chronic disposition more steady, lengthened, and indefinite resistance.

When noxious agents impress on the fabric or organization of vital power, a disposition to disease unaccompanied with the auxiliary circumstances of infectious maladies that urge them into speedy action, the disposition becomes fixed, not disturbing the economy of health, and of course exhibiting no appearance of disease.

The instances of apparent health, associated with morbid disposition that may be rendered active, whenever sufficiently excited, are numerous. They occur in all the strongly marked temperaments, such as the sanguineous or inflammatory, the serous or phlegmatic, the irritable or nervous, and the torpid or inactive. Under these several temperamental conditions of vital power, would be an originally inherent disposition to inflammatory diseases in the sanguineous or inflammatory,—to scrofulous and dropsical, in the serous or phlegmatic,—to distempered sensibility and mania, in the irritable or nervous—and to dyspepsia, general and partial plethora, visceral congestions, and paralysis, in the torpid or inactive.

Progenitors imbued with those specific temperaments, would be liable to transmit the inherent morbid dispositions attaching to them, to their respective offspring; and when neither of these sources exists, similar tendencies to disease may be acquired by the various ailments to which human nature, under certain circumstances, is incident. All actual diseases have a contaminating influence; and although some of the infectious tribes are not readily renewable (at least a temporary insusceptibility for being affected by them arises, as in smallpox, measles, scarlatina, hooping-cough, &c.), yet, in general, no diseased action induces an increased liability for its occurrence, furnishing what may be regarded as a sensitive or prompt disposition to resume the morbid state that had previously existed.

The individual who never has been diseased, (of which there are numerous instances, and probably many would still more abound, were human nature in less artificial circumstances than is

at present the case), may be fearlessly subjected to the common causes of illness, without an injury accruing to such naturally uninterrupted and almost inviolable health. On these happy occasions, vital power has acquired a habit and firmness of salutary action, that will not readly give way. The violence that would cause it to succumb, would be more likely to demolish the constitutional structures, than to damage the natural functions of life.

The morbid disposition, though in a minor degree, must in strictness be considered as a state of disease. It is a condition of vital power that is fraught with distemper, which may be elicited into action by such exciting causes as may be adopted, to disturb the quiescent state in which the tendency is existing. Were nothing unfriendly to such concealed disease to occur, it might remain throughout a long life inactive, but if disturbed, it might be brought into full action, when disease will be manifested, corresponding with the nature of the disposition which had given it effect.

Morbid action, whether directly induced by the agency of causes producing an immediate effect, or eventually resulting from a former disposition that may have long existed, when fully constituted, is the condition of disease that will require to be remedied, lest it should proceed to a fatal termination. In morbid action there is no obscurity as to the reality of a disordered state of vital action. The symptoms by which it is denoted, furnish the ostensible character of the ailment; it is then developed and recognized.

Seeing, then, that morbid action is a condition of vital power in which the healthful circumstances of life have been deranged, it becomes an object of just inquiry, In what consists the occurring change of these circumstances? so as to be enabled to say how the accruing disease is constituted, of what it is made up, its origin, progress, and consummation. The constituent arrangements of animal life, the temperaments in which they are exhibited, and the vital action by which they are governed and characterized, are, in all instances, somewhat different. Nothing like sameness, approaching to identity, occurs. The diversity of cause and effect obtaining throughout animated nature, could not coexist with monotonous power; hence it is evident that morbid action will assume an endless variety in intensity, in quality, and in character.

Nosologists may attempt to classify and reduce to given limits the range of disease, but nature disclaims the restraint, and transgresses whatever boundaries may have been artificially raised against the freedom, the diversity, and energy of their power. It is much too factitious to aim at controlling what is naturally incoercible. It is more consistent with the restricted powers of human penetration, and more conformable to just

principles of philosophising, to contemplate subjects as they fall under the evidence of the senses, than to indulge in imagining what may not admit of being intelligibly explained.

It is enough to regard morbid action, whenever presenting, whatever may be its variety or character, precisely as it actually exhibits itself, not with reference to other conditions of disease, with which it may be supposed to be allied, and by which it may be thought to be influenced. It is sufficient, in every instance of morbid action, to rest it on its own basis, and to estimate it solely by its own claims to consideration. There may be a convenience in giving a specifick name to morbid action, but that epithet should not be allowed to deceive the judgment, nor keep it aloof from being duly exercised on the real morbid state existing under such denominations.

Although morbid action, when fully constituted, is disease, whether arising from disposition, or direct infliction from noxious agents, yet it may be of practical importance to distinguish these two sources of morbid action from each other. Morbid action from disposition forms slowly, and, when fully developed, is characterized by an established fixation and obstinacy, that will prove very unwielding. This imparts to it a chronick character, in which less danger immediately arises than in more acute affections, and more time is afforded for combating it, by the protracted duration it is apt to assume. This is the case in lymphatick, glandular, membranous, muscular, cutaneous, ligamentous, osseous, dyspeptick, and nervous diseases, shewn respectively in scrofulous, erysipelatous, phlegmonous, eruptive, arthritick, osseous, dyspeptick, and nervous ailments. These diseases are commonly the offspring of latent disposition, whether originally inherent, hereditary, or acquired; and they will require to be treated with the minuteness, address, and patience, that are due to their peculiar source and formation.

Morbid action, resulting from a direct and obvious cause, is occasioned by the immediate violence sustained by the healthful state, and could only be prevented by obviating or withholding such noxious cause, and remedied, when occurring, by repressing and extinguishing, if possible, the morbid influence. In the sphere of this description of malady, may be included the vast group of affections produced by the deleterious effects of hurtful agents. The number and degree of these disordered states can only be limited by the greater or less efficiency of the morbid causes, and the casualties under which they may be operative.

Morbid action may be said to be a tangible evil, because it is accessible. It is not locked up and concealed in a disposition to become active, when favourably excited for that effect. It is most clear, that what has not an approachable existence, cannot be reached, and, therefore, cannot, be a practicable object.

This is the case with a disposition only to morbid action, where the existing tendency to disease neither can nor will come into positive action, without the application of a sufficient cause for effecting it. The state of morbid disposition is for the most part unknown, not being accompanied by any signs or indications by which it may be clearly recognized. The converse of this occurs in morbid action, in which all that may have been hidden is disclosed, or the diseased effect of noxious power is fully apparent.

Morbid action is the open state of disease that requires and admits of being remedied. It is the great concern of medical science rightly to understand its nature, and thence to provide for it an appropriate mode of cure. No correct knowledge of morbid action, either in the abstract, or in relation to the various circumstances with which it may be associated, can be acquired, without duly contemplating its origin, progress, and final constitution. By this mode of inductive scrutiny, conclusions may be arrived at which would satisfactorily explore and unfold all that is requisite to learn of the nature, character, and treatment of morbid action, in its utmost variety. The intelligence derivable from a minute and cautious investigation of the circumstances that are ingredients in the constitution and form of morbid action, is at once scientifick and practical, and will prove the only sure guide to rational and curative treatment.

Morbid disposition, however connected, however secretly linked with morbid action, may or may not be subdued by the extinction of the morbid action into which it may have been excited. The overcoming the morbid action does not necessarily imply that the disposition to that action, which held a recondite union with that contingent state, should be finally subdued, and eradicated at the same time. The two conditions, however continuous, and even homogeneous, radically considered, might, and actually do, exist, independently of each other. The disposition to disease whilst inactive, is too feeble to break down and supersede the action of health. Its incompetency for this effect, confines it to a state of inertness. On the other hand, morbid action, as resulting from the disposition leading to it, may be subdued, without involving the extinction of the tendency or aptitude that caused it to be brought into action.

When dispositions, as well as actions, are established in the organization of vital power, whatever may be the particular structure, they are not readily extinguished. Such an effect would require organick changes of motive power, which, though attainable, must necessarily be slow, contingent, and difficult. Whatever may be the organick conditions of vital power, its diseases may be justly considered as alike fair objects of medical treatment, and, for the most part, as curable. All deviations from the healthful state are unnatural ; the resumption, there-

fore, of what is natural, is always feasible, and generally practicable.

In the vast scope of morbid disposition and action, is comprised every diversity of ailment. All the instances in which the natural condition of health recedes from its standard, disease is introduced, assuming a degree of force and character according to the influence of the circumstances by which it may have been produced. Whenever the morbid state presents in its active form, it should be rigorously analyzed, for the purpose of deciding on the essential agencies by which it may have been generated, and brought into existence.

It is only by this sort of examination that the nature of a pending malady can be discovered and explained. When it is thus known, it is fundamentally understood. The process of reasoning exercised on it has been of the strictly inductive kind; by which authority alone can conclusions be rendered just and practical. Correct observation, adequate experience, and undeniable facts, are indispensably requisite, to enable the medical philosopher to form an accurate judgment on the nature and cure of disease, whether proceeding from inherent disposition, or from the more direct agency of external power.

ERRATA in Dr Kinglake's Papers in No. V.

Page 114, line 35, (title of the paper) for *Depressed or Exhausted Strength.* read *Depressed and Exhausted Strength.*
—— 115, — 10, *for* a vital power—*read* vital power
—— 116, — 25, *for* occasion—*read* occurrence
—— 116, — 30, *for* weakness,—*read* debility,
—— 118, — 18, *for* emanations—*read* emunctories
—— 118, — 5, *for* nervous—*read* various
—— 209, — 48, *for* delicate—*read* definite
—— 210, — 54, *for* working,—*read* wasting,

On Medicines of whose immediate action we are conscious. By Robert Abraham, Surgeon, Carlisle.

[The following essay is detached from a larger and systematic work on the operations of medicines, but being a distinct section in itself, the author conceived that it might be detached without material injury. He has to request, however, under these circumstances, that his readers will make due allowance for some peculiarities in the phraseology, and for some assertions that they might otherwise think too dogmatical. In the preceding sections of the main work, that phraseology is defined, and the reasons for adopting it stated, and those assertions supported by arguments too voluminous to transplant.]

Having now finished the consideration of those classes of medicines whose actions are respectively limited to the mental and

corporeal powers, I come to speak of those which extend their operation to both, and whose effects are compounded of a simultaneous increase or diminution of mental and corporeal mobility.

Of all the families of medicines, these are the most extensive and varied; the most frequently employed and the least understood; and of all others they are the most interesting to the medical philosopher.

Their peculiar characteristic is their effecting a change in the action of the heart, without affecting the circulating medium either as to quality or quantity, but by sympathy with the impressions which they make on some part of the nervous system. They consequently include all those external agents, moral or physical, which affect any of the five senses, and of whose action we are conscious, and those internal agents, which make impressions on the stomach, and of whose actions we are likewise conscious; together with all passions of the mind, whether produced by immediate external objects or internal reflection. If the subject were more perfectly understood, I should adopt a more accurate classification; but I shall content myself at present, with dividing them in a general way, according as they excite or depress the action of the heart.

The external and internal agents of this description, I define to be, *such agents as increase or diminish the heart's action, simultaneously with an impression, of which we are conscious, on some part of the nervous system.*

It is obvious that many of these agents cannot correctly be called medicines; for we cannot consider any power as medicinal, which is not so far under our controul as to render us able to apply it, at least occasionally, as a remedy; yet they are all so intimately connected together, that I shall be obliged to lose sight of the distinction, and to take a cursory view of them as they stand in their natural relations.

Of the general nature of Passion, or mental emotion, I shall endeavour to give a brief outline; to enter much further into the subject, would introduce much crude and irrelevant speculation. Nothing is more wanted than a classification of the passions; no subject has been more obscured by fiction and allegory; they have been hackneyed in a thousand shapes; and viewed in every light but that in which they are most interesting to a philosophical observer.

According to the hasty view which I take of the matter; there are only four primary passions,—Joy, Fear, Sorrow and Anger; of these are compounded all those varied emotions, to enumerate which even language is inadequate, which it is the art of the rhetorician to excite, and of the poet to describe, and the knowledge of which is beyond aught else interesting to a moral being.

Passion I consider to be so rapid a series of vivid images as produces an unusual impression (of an unknown nature) on the brain, which is communicated (by an unknown sympathy) to the heart, whose action it either excites or depresses.

But these definite passions must be carefully separated from the abstract ideas of pleasure, pain and action, good and evil, and motion which cannot be measured by any physical or logical standard, and are no more capable of definition than time, space, eternity, matter and spirit. We must carefully keep up the distinction between ontology and the philosophy of the human mind,—a distinction which the vulgar are seldom able or willing to make.

When, therefore, I say that Joy is a succession of pleasing images, whether of things present, past or expected; Fear, of painful ones, of things apprehended; Sorrow, of things remembered; and Anger, a succession of ideas of action of violent volitions or anticipations of volition; to which we are stimulated or irritated, by impressions really or imaginarily painful or injurious, I do not wish it to be understood, that I express any opinion of the abstract and independent nature of action, pain and pleasure, but merely that I class their effects, as far as we have evidence of them, by consciousness or the external senses.

Reason consists in associating and comparing ideas. The mind is the aggregate of ideas, and of the powers which conceive them. Ideas are of two kinds, those of volition and those of sensation or recollection. Ideas of sensation and recollection, where they are not altogether indifferent, partake more or less of pleasure or of pain; ideas of volition only differ in the degrees of action which the imaginary volitions, if carried into effect, would produce. Perhaps no idea enters the mind, which does not more or less affect the state of the corporeal system, though its influence may be imperceptible. Ideas of pleasure and action excite the motion of the heart; those of pain depress it. Now, when any train of thought passes through the mind with such rapidity and energy as perceptibly to affect the heart through the sympathy which it has with the brain, the centre of thought and nervous energy, and when the affection and reactions thus produced, whether *plus* or *minus*, verge on the state which I have delineated in another part of this work, so that the just association and comparison which constitute reason are impaired, that complicated change in the mind and body is a *passion*.

There are, therefore, two primary depressing passions, Sorrow and Fear; the first most durable, the latter most violent: Two primary exciting passions, Joy and Anger; but I shall not compare them with their predecessors, nor with each other, but leave it to moralists to settle the balance of good and evil, to compare the frequency and the poignancy of the asperities and the amenities of life.

If we adopt the principle, I hope a just, certainly a convenient one, of calling no train of thought a passion which does not perceptibly, that is either to the external or internal senses, affect the motion of the heart, we shall get quit of the majority of those indefinable expressions which have been so innumerably multiplied by the fictions of poets, and the refinements of philosophers. And if we analyse them according as they are compounded of pleasure, pain, and action, we shall find, I hope, little difficulty in reducing them to the four primary passions I have enumerated.

It is true that this analysis will have nothing in it of demonstration, and will vary with the temperament of the individual and the character of the age; yet I believe that, by proceeding cautiously on such principles, we may deduce many important truths.

Of what will thus be termed the secondary passions, Courage, where it is not mere apathy, must, I believe, be considered a mixture of Joy and Anger; Hope is Joy itself, and perhaps the only substantial joy; Indignation is Sorrow and Anger; Hatred is Anger and Fear; Despair, Fear and Sorrow; Pity is the Sorrow of Sympathy: Compassion is Pity with a mixture of anger, a desire to relieve what it feels for; Contempt is not a passion, but we often disguise Hatred under the name.

There are also some more complex feelings or trains of feel ings, which we call Passions, and which do indeed occasionally burst into emotions which are truly passions. Of these Suspicion shows itself in occasional emotions of fear, anger, and sorrow; Jealousy seems a mixture of hatred and love, each predominant according to the influence of casual associations; and Love itself, where it is not pure affection, and unmixed hope, an irregular succession of all the passions that can agitate the human breast.

The next class of agents of this description includes the evidences of the senses, the ideas or impressions (for I waive the controversies of Hume and Reid,) conveyed to us from the sentient extremities of the nervous fibrils.

The Senses are generally reputed to be five in number. Four local, those of Hearing, Smelling, Taste, and Vision. One general, that of Touch.

And first of Vision.—Vision is that faculty by which we perceive the form, colour, and situation of external objects; which we are enabled to do by means of rays of light reflected from the objects to the external parts of the eyes, by which they are concentrated on nerves endowed with the power of perceiving and discriminating them.

I do not think that there is any object of human knowledge, which has been more thoroughly investigated than the nature of vision. All the resources of Mathematics, Chemistry, Anatomy,

and Logic, have been lavished on the properties of light, and the structure of the eye. It has by turns attracted the attention of Porterfield and Reid, of Newton, Huygens and Brewster,—of almost every scientifick inquirer who has been distinguished by his exertions, in extending the boundaries of human knowledge; and those dark corners of its history, which are not thoroughly explored, have now become objects rather of amusing speculation than of useful research.

But the other senses, either from their being less extensively connected with the general objects of scientific investigation, or from their being less capable of precise experiment, have met with comparatively little attention, and we are very imperfectly acquainted with the properties of the agents which impress on them their distinctive sensations; and least of all are we acquainted with those sensations in the point of view in which I have to consider them, namely, how far the degree of pleasure or pain they produce, and by which they influence the motion of the heart, is necessarily inherent in them, or the effect of casual and precarious associations.

I am inclined to think the impressions are not so simple as many people imagine; nor yet so indefinable, and that if we could by any possible means analyse the immense variety of tastes, smells, and sounds, as we analyze light with the prism, we might reduce them to a few as simple principles, as those into which Newton resolved the countless multitude of colours.

But this, it is to be feared, from causes which need not be enumerated, can never be effected; and the only road to discovery which is open to us, is a diligent comparison of parallel circumstances in the different genera of impressions, which may lead to some analogy capable of suggesting a theory which experience may prove to be true.

There is one circumstance peculiar to light, and it is believed to no other object of perception; that its apparent perfection and purity depend, not on its simplicity, but on a just combination of a number of ingredients, the preponderance of any one of which would give it colour, that is, cause it to impress on the retina the peculiar sensation distinctive of the preponderating ingredient.

One of the most remarkable proofs of this is, that if we look at a colourless object, for instance, a sheet of blank paper, having previously looked for some time at a coloured object, this white or colourless paper will appear to an eye so prepared, to be itself coloured, and the colour it will assume will be that which would be composed by a mixture of all the rays which united produce the colourless ray, *minus* that ray or rays which gave colour to the object that the eye had been previously fixed on.

This depends on the property peculiar to the nerves of sen-

sation, that, when impressions of any kind have been made on them for a certain period, their susceptibility to such impressions diminishes, and the consciousness of them fades; and thus it happens, that, when the eye has been fixed on a coloured object for a definite time, its sensibility to the colour of that object is for a time destroyed; and, on receiving from the colourless object the body of rays, which, when mixed equably together, neutralize each other, and become colourless, it ceases to perceive that particular ray on which its regards have been previously fixed, and the white object appears of that colour which would be produced by the mixture of the remainder.

This is familiarly illustrated, by placing a wafer, say a red one, on a sheet of paper. Earnestly regard this wafer for a few minutes; on removing it, and looking at the paper again, a certain portion of it, similar in size and shape to the wafer, will appear an intense green; and that this green is composed of all the prismatic rays united together, *minus* the red, may be proved by disposing pieces of paper, coloured, after these rays, round a wheel, and then by turning the wheel round with such rapidity as to confound their impressions, when a similar green will be produced.*

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* I think it not improbable, that the green colour of the sea depends on water being a coloured fluid, that is, having the property of reflecting some rays, and transmitting others; and I am confirmed in this opinion by the fact, that individuals descending to some depth in the diving bell, find all visible objects a deep red, the accidental colour of green. It is true, that objects looked at at small depths, do not appear green, though the whole of the water does; but there is a fallacy in this. We cannot see any object at any distance obliquely in the water, on account of refraction; and in looking directly down, we at first see nothing but the green sea, and in the few moments which it takes to accommodate the focus of the eye to the objects at the bottom, its sensibility is deadened to the very green it is looking for. A man that looks through a pair of green spectacles at first, sees all objects green, but that colour soon goes off. If we had a sea of green glass, it would appear to navigators red, and objects at the bottom would be green; and, *vice versa*, when a white object appears red, it shows that the light is transmitted through a green medium. I have been told by individuals who have crossed the Atlantic, that, on entering the Gulph of St Lawrence, as soon as a vessel arrives, though not within sight of land, into the *embouchure* of the river, the water appears red, and on being drawn up proves fresh. This arises from the opaque particles contained in the river water, which causes it to reflect all the rays, that is, deprives it of colour, and as the eye has been previously accustomed to the green rays from the sea, it is rendered insensible to those proceeding from the colourless water, which therefore appears red, or reddish; though, for any thing I know, the bay of St Lawrence may seem green enough from the land, to an eye that has not gazed for weeks on the green ocean. The only objection I know of to this hypothesis (or fact if you please), of water being coloured, is its alleged uniform appearance at all depths; but this is not exactly true, for the experienced eye of a sailor can readily detect a sand bank, if he approach it by daylight, by the change in the colour of the water, and, besides, from refraction, we cannot make any accurate observation; if the surface of the water, and if at a distance, we are equally incapacitated by reflection, waves, and the imperceptible mingling of sand and water. I am strongly inclined to think that the blue colour of the firmament depends on a similar cause.

Now, these secondary colours are called *accidental colours*, and green is the accidental colour of red, and red of green, for either of these colours being subtracted from the prismatic rays, the sum of the remaining rays produces the colour which is called *accidental*, to that which is taken away. The explanation of this phenomenon is of great importance, and explains many others in the science of optics.

And I think it is analogous to this, and that the analogy may be rendered of great service; that, after drinking dilute sulphuric acid, whose quality, in respect to taste, is intense sourness; the purest water, on being drunk, tastes very sensibly sweet, and we find that no taste is more delicious than the due intermixture of sweet and sour, in the same manner as no mixtures of colours harmonise so well as those in which the colours mixed are accidental to each other. Now, admitting the analogy, we shall find a most extensive and important train of deductions; and if we find these deductions agree with the facts, as developed by experience, we shall have good reason for believing that the hypothesis, that there are a certain number of primary tastes, which, when combined together, neutralize each other, is more or less the fact.

It may seem a bold and paradoxical assertion, that so tasteless and limpid a substance as water, is a combination of different tastes; but is not more paradoxical, than the assertion, that whiteness is a compound of colours, and is certainly not so bold, inasmuch as it is suggested by that analogy.

With respect to the arrangement of tastes, it must be difficult, not merely from peculiar difficulties, (not the least peculiar of which, is the permanence of their effects on their peculiar organs, in which they exceed even colours) but from their constant combination with odours.

Perhaps four primary Tastes, if not the four, are sweetness, bitterness, sourness and saltness; and, on the combination in different proportions of these, and perhaps another at most, I believe, with the auxiliary qualities of flavour, pungency, astringency and mechanical form, depend the infinite multitude of pleasing impressions, which constitute so large a portion of the knowledge, happiness, and misery of mankind.

But it may be asked, Why I do not include the three former of these auxiliary qualities, among the tastes, as is usually done by the vulgar? Because I do not believe that cognizance is taken of them by the proper gustatory nerve. I think that flavour depends on volatile particles of masticated substances, arising from the fauces into the nose; so that flavours are properly smells perceived from substances in the fauces; and in this I am confident every accurate observer will agree with me.

Astringency is to me a very inexplicable impression, and I am quite at a loss to explain both its action in the mouth and

the intestinal canal; but of this I am satisfied, that the sensation produced by it in the mouth, is not analogous to what is strictly called Taste.

Pungency is merely an acute sensation of touch, arising from chemical or vital stimulants, and is nearly the same, on whatever nerve or part of the body it is made. It was the opinion of the great Bichat, that pain is merely the excess of the sensations peculiar to each particular part,—a supposition almost self-evidently true. He relates a curious anecdote, of a man of strong nerve and intellect, who underwent an amputation, and who, being desired to direct his attention to the matter, assured Bichat, that the pain following the division of the cutaneous, muscular and osseous structures, differed totally in kind as well as degree. Now, pungency arises from an intensity of *sensation*, if I may use the expression, which falls short of, though it may verge nearly on, that which would produce positive pain, like which, it differs partly in kind as well as degree, according to the profound idea of Bichat.

With respect to the auxiliary of form or substance, I believe there is more in it than is commonly imagined. Of some simple and nourishing substances, such as flesh meat, wheaten bread, rice, milk, &c., I believe all the pleasing impressions they make, depend on flavour, a moderate degree of sapidity, and that gratification which their form or substance gives to the uneasy sensations at the stomach.

Yet, if we proceed to smells, and carry to them the analogy we have extended to tastes, we shall find difficulties, I fear, for ever insuperable in forming any scientifical classification, or indeed in fixing on a single one of them, which we may consider as primary. Their variety is so innumerable, their impressions so fugacious and so different, in different individuals, and so much influenced by accidental circumstances, that even the vulgar have not attempted to make any real or imaginary associations. The most imperfect languages of the most uncultivated tribes, contain words figurative of sweetness or of blueness, of sourness or of redness, and experience has instructed every individual with the precise ideas they are meant to convey; but even the most refined dialects of modern Europe, contain no similar terms applicable to the impressions on the olfactory nerves. They are spoken of according as they are agreeable or unpleasant, and according to the caprice or idiosyncrasy of individuals, are called sweet or fetid; and for more precise terms of description, we have recourse to their specific distinctions, and abandoning all attempts at generalization, we describe the odours of the rose, the jasmine, and the violet, by adjectives compounded of the names of the flowers of which they are characteristic.

The last of the local senses is Hearing. Of this, however, I

shall entirely waive the consideration. The extent and intricacy of the science of music is such, as to render an abridgment difficult and laborious, and a full detail incompatible with the limits of this essay.

Under the name of Touch, the fifth or general sense, we include those impressions, not included in the local senses, which are made on any sensible part of the human frame. These impressions may be made, either directly, by mechanical or vital powers, or indirectly, by chemical. It is to the impressions made by mechanical agents, that the vulgar commonly restrict the term; but, if we do not include under it those made by heat, and cold on the skin and stomach, and those made by stimulants on the latter, I know not where they are to be placed. I therefore assign to touch the enlarged definition contained in the preceding paragraph.

1. Of *Mechanical Agents*.—The power possessed by the cutaneous papillæ of discriminating the mechanical properties of tangible objects, and the economy of its distribution has excited the admiration of all who have contemplated the physical structure of animated beings. But it has too little connection with medicine to warrant any special consideration in this place. I will merely observe, that it is dependent, more than any of the other senses, on mental cultivation, that is, on exertions of consciousness; and that those parts pre-eminently endowed with the power of discrimination, do not appear to have been so *ab initio*, but to have attained that distinction subsequently. Individuals who have lost their hands, or who have been denied them by nature, acquire in their toes and feet those powers which would otherwise have been seated in the fingers; and the blind, from a similar cause, acquire an extraordinary share of this species of perception.

2. Of *Chemical Agents*.—In speaking of chemical and vital powers, I exclude epispastics and erodients, and such agents as affect a visible organic local change; for the sensations produced by such agents are secondary, and dependent on that organic change, and we are not *conscious of their immediate action*. The only chemical agents I have to consider are cold and heat, or, to speak more correctly, I have to consider caloric alone. Now, I am somewhat in doubt, whether we do truly perceive the addition and abstraction of caloric by its immediate effect on the nerves, or merely by the influence it has on the expansion, contraction, and other changes of form or property in the solids or fluids; I am inclined to think the latter, and that the influence of caloric principally depends on its favouring or retarding those chemical changes which are essential to vitality; and, perhaps, after all, it is not its primary impression of which

we are conscious, but merely a secondary one, following the former so closely as to appear simultaneous. But it will be an unnecessary refinement to consider heat otherwise than as a direct stimulant, and cold as a direct sedative. It is true, that, when the system is languid, from excessive excitement, cold will refresh, and that its sudden application seems to stimulate; but the former is dependent on its diminishing, a degree of action which is incompatible with health and comfort, and the latter to complicated reactions, to its determining the fluids to the heart and brain; by diminishing the contractility of the external parts of the sanguineous system, and, by the consciousness of change, rousing the powers of volition; but it would be as rational, on that account, to term cold a stimulant, as to call heat an epispastic, because hot water will vesicate.

3. Of *Vital Agents.*—This, the third and last class of these agents, is that which is the most under our controul, and is the most intimately connected with medicine.

The only part of the human frame in which we are immediately conscious of the effects of vital agents or stimulants, is the stomach. There are certain substances, the chief of which are ardent spirits, pungent, aromatic, and essential oils, which, when swallowed, diffuse a feeling of warmth in the stomach, whereby they increase the action of the heart. *Firstly*, either through some direct sympathetic action, or indirectly through the medium of the brain, by rousing consciousness and energy, and by mental association; and, *secondly*, very often by removing those feelings of pain or of lassitude which tend, in some similar manner, to depress it. These medicines are of old and most extensive use, and have been named *cordials* and *carminatives*; the former of which names has been suggested by their obvious influence on the heart, and the latter by a vague and idle analogy.

Having assumed the general principle, not certainly without exceptions, that the direct and primary effect of the pleasing sensations, whether of perception or conception, mental or corporeal, as they are vulgarly termed, is to excite the action of the heart, and of the painful to depress it; it remains for me to point out the sensations of perception which belong to each class, and to endeavour to shew how far they are pleasing or painful from inherent properties or casual association.

With respect to vision and its objects, it does not appear that there is any thing either essentially or accidentally agreeable or disagreeable in colours, merely considered as such. Our ideas of beauty in colour, are perpetually fluctuating from one extreme to another. We are pleased with colours when they harmonize well with each other; when no tint is too abundant

and too glaring, or, with imitations of nature, when they correctly resemble it, or in nature itself, when they clothe agreeable forms. They commonly communicate the most lively ideas of pleasure, when we contemplate the sky or the ocean illuminated by the rising or the setting sun, when the masses of clouds or water seem wonderful from their vastness and brilliancy, and when, in hue and form, they resemble objects which we are accustomed to regard as vast, magnificent, and attractive.

A colour sometimes communicates pleasure, when the eye is fatigued by gazing on one to which it is accidental; all other pleasure, which colour can communicate, depends entirely on associations the most casual and arbitrary. I have read an account of the dissection of an individual who died from the effects of a corrosive poison; and the narrator dilated on the *beauty* of the mucous membrane of the stomach, which was covered with ramifications of arteries and veins, minutely injected, the former with brilliant arterial blood, the latter with venous. To any one but an anatomist, such an object would be one of unmixed horror.

After the invention of the kaleidoscope, it was proposed to construct an instrument to produce regular variations of colour as agreeable to the eye as the tones of the harpsichord are to the ear. But the project was impossible. There is nothing in colours analogous to melody. It is true that they are sufficiently definite to constitute a *harmony*, which their variations might have, in common with those of numbers or forms, as well as sounds; but without a melody or close association with something indicative of and exciting the passions, as the association between certain notes, and combination of notes, and the human voice, the harmony would be inattractive, and the combinations be totally uninteresting

2. *Of Tastes.*—An infant, in the very first hour of its existence, swallows sugar with avidity, and repulses bitter, sour, acrid, and saline substances, with emotions of pain and disgust. From this and many other considerations, I am led to conclude, that the first of what I consider the primary tastes, is intrinsically pleasant, and the three last intrinsically painful. But as we advance in life, these natural tastes become vitiated. Sweetness, from being combined with substances which load and oppress the stomach, becomes frequently disagreeable by the unpleasant associations which it excites, and tastes, originally unpleasant, begin to excite pleasure more or less intense. The first predilections we show, after we have ceased to delight exclusively in sweet and bland farinaceous food, are for substances which are saline.

This I am inclined to attribute to physiological changes, and

to the chemical influence of salt. When children begin to be indulged in animal food, their stomachs, in general, are not fully adequate to its digestion, and the extreme rapidity of the growth, during the tenth and twentieth years, seems more than in proportion to the powers of the digestive organs. The muriate of soda is, both from its chemical and vital powers, peculiarly adapted for use under such circumstances. As a septic, it forwards the chemical decomposition of the ingesta; as a purgative, it facilitates their evacuation; and, by its immediate stimulus on the stomach, it relieves the sensation of repletion which animal food, used largely without condiments, invariably occasions. Under these circumstances, an inclination for its use is gradually acquired by children; this inclination becomes strengthened by immediate gratification and former associations; and unless they are indulged with salt and salted meats to satiety, seek them with avidity, and devour them with the extreme of gratification. That time has with me not long passed, and the sensations of delight, which those simple enjoyments afforded me, are yet vivid in my memory.

Between the eighteen and twentieth years, sometimes sooner, seldom later, another revolution begins to take place in our inclinations. We then begin to delight in acid and acrid substances; in mustard, peppers, pickles, and sauces. At that time the frame is usually adult, and the demand for nutriment diminishes, the appetite decreases, and if it were not for artificial means would decrease still more.

But though the natural demands of the system decrease, the inclination to swallow food does not decrease in like proportion. The pleasure we experience in satisfying hunger, tempts us to swallow a more or less inordinate quantity of the food which conferred that pleasurable sensation, which, by association, it retains after the internal demand for it has passed away; and thus the increase of the capacity of the stomach becomes, from gradually confirmed habits, to exceed its capability of digestion. Salt becomes, comparatively, a weak and inert stimulus; its place is gradually supplied by mustard and peppers, which increase the sensibility of the palate, and excite, in a higher degree, the alimentary canal. Though the taste for salted meats declines, yet old association still retains them in some degree of favour; but acids and acid pickles which, from some inexplicable causes, counteract their taste and assist their digestion, become their indispensable accompaniments, and gradually acquire favour from the same causes which formerly rendered the saline substances attractive.

As age advances, a taste for astringents and bitters gradually developes itself. The stomach is then not merely inadequate to the load incumbent upon it, but the vital powers

themselves become disordered, and as tonics are invariably accompanied with bitterness and astringency, the benefits derived from their use create a predilection, first for the substances which contain, and next for the tastes which accompany them. In civilized society, among individuals habituated to the use of the unnatural stimuli above detailed, the stomach is commonly the first part which becomes habitually disordered and debilitated, and experiences, as it were, a premature old age. Substances, formerly nauseous in the highest degree, become habitual and agreeable, and thus the natural order of predilections becomes altogether reversed, and changes take place apparently inexplicable.

3. *Of Smells.*—Odours and flavours seem, in the point of view in which I have now to consider them, the most inexplicable of all the sensations; and the difficulty is increased by the entire want of generic terms. With a few rare exceptions of smells which seem to afford intrinsic pleasure, among which I include those of the rose, the violet, the jasmine, the lilies, and the primula, the influence of smells seems to depend entirely on association. Odours, which to some are agreeable in the extreme, excite in others irrepressible disgust; perhaps none more peculiarly so than that of musk. Infants, and children in their early years, seem in general quite careless of smells, unless they become so pungent as to give pain; but as they grow up, their taste becomes modelled on the tastes of those who surround them. The odour most powerfully disagreeable to most people is that of assafetida; but some eastern tribes repute it such a delicacy, as to use the tincture as a sauce to their victuals; and, even in this country, it is by some people used to oysters. There are few people who have not acquired an inclination in favour of onions; from onions is a natural transition to garlick; and he who can relish garlic may soon learn to admire assafetida. Ketchups become agreeable by being eaten with good things. At length the best food becomes unpalatable unless it have its usual accompaniment; but I never can believe that the poor man has less enjoyment of his unsavoury diet, than the epicure who sits down to a highly seasoned dish, with his palate perverted by his artificial gratifications *. Narcotic odours, a very numerous tribe, including those of the peach and the hawthorn, are to many people exceedingly disagreeable, and are unpleasant to all when excessively strong; the prussic acid they contain occasions violent headaches; and to individuals who have once experienced their effects severely,

* The gratification derived from epicurism is traceable in a great measure to the moral pleasure occasioned by the indulgence of the individual peculiar inclination.

hey afterwards in the smallest degree become intolerable. The mell of jalap is not peculiarly powerful, nor is it fetid; but I remember when it excited in me the severest emotions of repugnance, with nausea and vertigo; the reason was, that I was disgusted with it, by having been dosed with it when a boy. I have heard others observe, that of all odours that of jalap was o them the most disgusting, and directly proceed to assign he same reason. In general, we like any smell which we associate with the idea of comfort and wholesome food, and dislike such as are connected in our imaginations with any thing painful, disagreeable, or filthy. But I believe that there is no odour whatever for which somebody may not acquire an inclination, and none which is unexceptionably agreeable to every body. The meaning of the words aromatic and fetid is so indefinite as not to admit of application.

Having now enumerated and endeavoured to describe the principal agents which influence the brain and the heart, and of whose action we are conscious, it remains that I should consider them with more immediate reference to their capability of medical application.

The primary division must obviously be into those which increase the action of the heart, and into those which diminish it. For the former class there is a name in use sufficiently accurate in its etymology and limited in its application; and, accordingly, the medical powers which it comprises I shall term CORDIALS.

For the second, it is somewhat difficult to find a name equally unexceptionable, and I am equally unwilling to originate a new word, and to confuse the meaning of an old one. I shall venture, however, to term such medicines of that description as I shall have to describe, NAUSEATORS; for it is not convenient or proper to use any of those powers, excepting such physical ones as excite nausea.

The use of the mental stimuli of Joy and Hope, and the exciting of such associations as lead to them in relieving the impression of mental and bodily disease, and the debility of convalescents, is as ancient as medicine itself. We read in Holy Writ of Saul, who was commended to the music of David, and similar examples are abundant in the writings of the ancient poets and physicians.

The supporting the spirits of the sick by soothing and encouragement, and the avoiding such mental irritation as can bring on the violent and depressing passions, has, as far as I know, been invariably inculcated and practised, and its importance thoroughly understood; and though the indirect assistance of music is not now I think often had recourse to, it has fallen into disuse entirely, from its uncertainty and comparative inefficacy.

Nor has opinion fluctuated much, however it may have apparently, respecting the propriety of gratifying the other local senses. The immense quantities of nauseous substances so liberally prescribed by the older physicians, have been much reduced of late years by the discovery and introduction of substances of more agreeable qualities and of greater efficacy. However often they may have apparently deviated from it, I am sure it has always been a rule with enlightened practitioners to respect the feelings of their patients, and to avoid the irritation occasioned by the exhibition of medicines unnecessarily nauseous.

Of the substances in common use as Cordials, and of their effects, it is unnecessary to say much. They consist principally of alcohol, combined with different essential oils; and much of the stimulating power of alcohol is traceable to the increased action of the heart, from its sympathy with the stomach, and the pleasure experienced from the sensations it communicates.

The most remarkable medical effect, and that which they are most frequently employed to obtain, is to obviate the griping occasioned by drastic purges, and disorders in the primæ viæ. This effect is almost immediate, at least it is coexistent with the consciousness of the warmth they excite, and most sensible; and truly it is somewhat difficult to explain. The same effect is produced, though not so sensibly, by the application of heat externally to the abdomen; but perhaps until we are better acquainted with the laws of muscular action, and the influence of consciousness, it would be idle to attempt a minute explanation.

With respect to the second of these classes, Nauseators, there are no medicines whose operation is more obscure, or respecting which more different opinions have been entertained.

They are generally described as Antispasmodics—a vague and unmeaning term, objectionable in every point of view—a remnant of a pathology long since obsolete.

The disorders in which they are mostly employed are those which are commonly termed Nervous; but beyond some vague idea of their diminishing excessive local muscular action or spasm, as it is hypothetically termed, the immediate indications which they are expected to answer are entirely undefined; at least since physicians have ceased to entertain the somewhat unintelligible idea of their repressing the motions of the animal spirits.

But whatever their operation be, since they possess none of the effects of Hypnotics, of Intoxicators, of Purgatives, of Diuretics, nor of any other medicines whose effects are to increase any of the local actions of the frame, I think its explanation must be attempted on different principles, and looked for in the

mental powers and those sympathies which immediately connect them with the corporeal.

Of the three great divisions into which I have thought it proper to distribute the different substances and powers which constitute the Materia Medica, the medicines which are comprised in the first, influence *the mental power through the corporeal*, those of the second influence *the corporeal powers alone*, and those which are included in this last division, of which Nauseators are the second class, in distinction from the Medicines of the first division, seem I think to influence *the corporeal through the mental powers.*

The essence of all Nervous disorders, that is of disorders as far as they are nervous, though nervous disorders are often complicated with organic changes, I believe to be neither more nor less than too acute consciousness of the impressions naturally made on different internal and external parts of the nervous system; accompanied, of necessity, by a preternaturally irritable state of the semivoluntary muscles.

Among the symptoms of "the Protean disease," as Hysteria has emphatically been termed, and of the eternally varying forms of senile hypochondriac nervous diseases, the most conspicuous are *globus hystericus*—beating in the head, in the precordia, sensibility to currents of air, and of preternatural heat in different parts of the skin, accompanied with costiveness and loss of appetite occasionally—restlessness and want of sleep; and individuals most subject to those ailments are those whose habits or circumstances lead them to concentrate their cares and attentions on their own feelings and comforts.

The bare enumeration of these symptoms seems almost sufficient to establish the position I have laid down. To what can the sense of preternatural pulsation, without any organic change, be owing to, but to a preternatural consciousness of the motions of the arteries? the excessive sensibility to currents of air, and imaginary sensations of heat, but to a morbid consciousness of impressions on the parts affected? the loss of appetite and sleep, but to the attention being diverted to those feelings alone? and the costiveness to a diversion of the attention from the impulses of the rectum?

The most important and interesting form is that affection of the stomach and throat which constitutes the hysteric fit.

The most prominent symptom of it is the sensation of wind rising from the stomach until it reaches the upper part of the esophagus, where it is checked; in mild cases, it merely produces a sense of constraint and strangulation until it is evacuated; in more severe instances, it is accompanied with sensations of violent contractions of the stomach, with simultaneous ones of the abdominal and thoracic muscles; *the pulse and action of the*

heart is diminished in the ratio in which respiration is impeded. Sometimes the contraction of the stomach does not intermit, the muscles of respiration become rigidly contracted, and the patient lies motionless and apparently dead; this state often continues long, and the affection is called catalepsy.

Another remarkable symptom considered by Sydenham and most medical writers since his day, as more peculiarly pathognomic than any other, is the evacuation, on the subsidence of the fit, of a large quantity of limpid urine; but the quantity I apprehend to arise merely from previous suppression of the evacuation, occasioned by irritability of the neck of the bladder, which prevents the relaxation of the sphincter, similar to that which exists in the esophagus, and the limpidity from the absence of organic disease. As the attention is commonly directed to more formidable symptoms, this suppression, where it exists, (though, if I may differ from so great an authority as Sydenham, I should submit, that it does not occur so often as he represents,) is seldom complained of; but I was once consulted by a female who had evacuated no water for twenty-four hours, and whose abdomen was tumid and painful. I suspected at first the nature of her case, as she was of very sedentary habits, and had debilitated herself greatly by suckling. By rigid examination, I elicited the fact, that she had a short but severe hysteric fit of the cataleptic character the day before; and instead of introducing the catheter, ordered, on the principle I am now recording, large doses of the tincture of valerian, which afforded almost immediate relief.

But to return to the affection of the stomach. All this series of harassing, and apparently formidable, symptoms, I attribute immediately to too acute consciousness of the motions and impressions of the pharynx, to consequent irritability of it, irregular contraction, and a train of complicated associations thus excited.

When the rising flatus ascends in the esophagus, it ascends painfully, laboriously, and often violently; for the canal contracts on it as it ascends, from the increased consciousness of impressions, and consequently increased susceptibility of stimulus; and propels it, as if it were a lump of solid food, higher and higher, until the contraction round it becomes so complete and extensive, as to arrest and enclose it as it were in a bag; this produces the globular sensation, the painful constriction, and sense of suffocation, from the connections among the muscles of the pharynx and the larynx.

In the mean time, if this be not relieved, the association of muscular action extends the contraction downwards, until the stomach itself becomes affected; it contracts violently, and thus increases the efforts to expel flatus, and the painful sensations

above; the stomach calls into action the thoracico-abdominal muscles; the contractions are often quick and short, accompanying the attempts at respiration like frequent convulsions. Sometimes, in what is called catalepsy, the contraction is rigid and continued, and the powers of volition seem completely overwhelmed, the lips grow blue, and respiration almost entirely ceases. Once establish the fact of the arrest of flatus in the esophagus from hyper-contraction, and all the other symptoms must follow, with the certainty of physiological deduction; and this fact, I flatter myself, no one can doubt, who will examine attentively into the feelings of his patients.

The grand indication of cure is to make a strong counter-impression on the nervous system. This is effected by a sudden affusion of cold water, by pungent stimulants, as ammonia; and most effectually, by nauseators of all kinds, such as valerian, castor, assafetida, empyreumatic animal oils; which substances, by the powerfully disagreeable sensations they excite, concentrate the attentions and consciousness of the patient on the organs they affect, and, by the depressing power of the sensations of pain and disgust which I have attributed to all disagreeable impressions, diminish the irritability of the nervous system. The sympathetic action on the heart I do not take into account.

Another effectual manner of relieving the fit, is to pour water into the mouth, and close the mouth and nostrils. The water gets into the larynx, and stimulating it and the upper part of the pharynx, transfers the attention and the irritability to those parts. The relief afforded in catalepsy is instantaneous.

The hooping cough, and the nervous cough, as it is called, to which adults are very frequently subject, clearly arises, if I may judge from analogy, and my own personal experience, from too great consciousness of impressions on the larynx, whereby the natural mucus of the parts affords an irritation that excites violent efforts to expel it. Now, in this kind of cough, and I myself have suffered not a little from it, the more the individual coughs, the more the irritation increases; and when he gives over, it is not because the irritation has subsided, but because he is too weak to cough any longer. I remember once being in so irritable a state from an attack of this kind, that any thing that directed my attention to the seat of my ailment; for instance, an inquiry from an acquaintance, whether or no my cough was any better, would bring on an immediate fit of coughing. In the hooping cough, fetid substances have been used with great success, and might, I dare say, be useful to adults affected with the common nervous cough. If they could be persuaded to take them, the plan which I find most useful myself, and which I have recommended with considerable success to others, is to restrain the cough as much as possible by volun-

tary efforts; and not to make exertions to bring up the irritating matter. This kind of cough often becomes habitual in spite of all efforts, and occurs from gradual association at a particular hour of the night, and this becomes converted into a confirmed asthma. Indeed, I believe there are few asthmas which have not this kind of commencement.

Intermittent fevers, which have continued long, frequently degenerate into mere nervous affections; that is, there are no symptoms of febrile derangement, but the shivering continues to seize the patient at the usual intervals. I was informed by a highly respectable naval surgeon, now resident in the west of England, that, on his return from the West Indies, where he had been stationed for some years, he was much harassed by this affection; and being convinced from his sensations, and the state of his health in other respects, that the fit arose merely from his apprehensions of its access increasing his irritability, and the consciousness of some imaginary impression made on his muscular system, he inferred, that, if he could throw himself into a sound sleep at the time when the shivering usually came on, the access would be kept off. With this intention, he took a large dose of opium, the effect of which completely answered his expectations. This method of treatment has since been extensively practised, with great, but not unvaried success, by Sir Gilbert Blane; perhaps the failures arose from not discriminating the cases in which the nervous character was predominant. What is yet a stronger fact, a lady whose case is mentioned by Dr Crowther in the Edinburgh Medical and Surgical Journal, p. 47, No. 86., was affected with an intermittent fever. She fell into the same train of reasoning as the gentleman I have alluded to above; but conceiving that it was within her own power to effect a cure, she restrained the fit by strong efforts of volition, and thus effected a complete cure. The well informed reader will call to mind the immense catalogue of nauseous remedies,—remedies, nauseous as well by the filthy associations connected with them, as by their sensible qualities, among which powdered toads, living spiders, coiled in their webs, were among the least disgusting, that were formerly used in inveterate intermittents; and he will, I trust, see the analogy between their influence and that of the mental powers.

But in all the tissue of nervous affections, whether they be denominated hysteric, hypochondriac, or spasmodic, we must remember, that they are usually preceded or accompanied by organic affections of parts, which become the seat of the nervous complaint; and which, by attracting the attention of the patient, and exciting his fears, are often the cause of the malady. Thus, with most of the forms of hysteria and hypochondriasis, there exists dyspepsia, which first attracted the attention of the

patients to the stomach, and the parts which sympathize with it, and continues and combines itself with imaginary affections; and in the remainder, there is usually a low fever, with exacerbations, marked by furred tongue, heat in the palms of the hands, clouded urine, and flushing in the face, which has been brought on by want of rest, or some slight exposure or excess, operating on delicate constitution, and in which the real symptoms of illness are confounded with the imaginary ones, and contribute more than any thing to persuade the patient of the serious nature of his illness. A little want of sleep will alarm a patient of this description so much, and render him so feelingly alive to all his sensations, as absolutely to prevent his falling asleep until he becomes seriously ill. A slight headach, from a little plethora or gastric disorder (as I myself often experienced, until experience made me wiser), will, by attracting the attention to it, increase the consciousness of sensation to such an extent, as to render it intolerably painful and alarming, until the attention of the patient is unconsciously diverted from it by cheerful company, or some new and interesting train of thought. The nervous and hooping cough is often attended with pulmonary consumption. Those violently painful affections of the bladder and ureters arising, I suppose, from an excessive consciousness of the natural motion, gradually degenerating from the causes I have particularized into unnatural action, which are often symptomatic of juvenile hysteria, and are very common in the old of both sexes, resembling the sensations which accompany the passage of urinary concretions, occasionally accompany genuine lithiasis; of which I once had a curious instance in an old man, a subject of the latter complaint, who became so extremely importunate for medicine to relieve the violent pain which he suffered, that a medical man to whom he applied, hoping to disgust him with physic, gave him some tincture of assafetida, with directions to take it undiluted; but from this medicine, the poor patient experienced, to the no small surprise of the administrator, great relief, which continued, until its flavour, from habit, ceased to affect his senses powerfully.

Lastly, I may observe, that those patients who are extremely sensible of currents of air, are usually affected, more or less, with chronic rheumatism.

To conclude: the general indications for the employment of nauseators are, to employ them in conjunction with such remedies as are likely to remove the exciting causes of the nervous disorder, and to distract the attention from their effects. Combined with change of situation, with mental amusement and relaxation, and moderate corporeal exercise; and according to local indications, with bitters, tonics, laxatives, anodynes, and counter-irritants, in the hands of the judicious practitioner, their

value is incalculable in restraining and removing the exacerbations of morbid sensation, whether it exist independent of any serious organic affection, or add to the asperity of the pangs of incurable disease.

CARLISLE,
October 1826.

Notice of two New Species of Gravel. By M. MAGENDIE.—(Journal de Physiologie Experimentale et Pathologique, October 1826.)

IN a work which I published some years since, on the causes and the manner of treating the different kinds of gravel, I think that I established, by a series of experiments performed on animals, and also by observations made directly on man, the close relations which exist between the nature of the food taken, the quantity and quality of the drinks, and the composition of the urine. I have shewn, that the different kinds of sandy particles that escape from the urinary passages, in the disease called gravel, are themselves of this or that nature, according as the urine presents this or that character; finally, I think I have proved that the nature of the sand passed, points out generally the kind of regimen; for example, that the gravel of a red colour, or uric acid, so painful to persons affected with it, is always, so to speak, the expression of a full regimen. Indeed, this disease is never seen in people who are sober, and who take much exercise; but, as well as the gout, it is peculiar to the great eaters of flesh, and those who live luxuriously on succulent animal food, and have passed the age of muscular activity. Such persons have necessarily much urea in the blood, are disposed to concretions of urate of soda in the joints, namely to gout, and to uric acid calculi in the bladder, that is to say, to gravel and stone.

The facts which I am about to relate will further confirm this useful application of physiology to medicine, and throw light on the origin of urinary concretions.

A statesman, much inclined to the pleasures of the table, is sent on a political mission into a country, where the inclination to good eating is very prevalent. During several months he gives and receives a number of official dinners, in which he at once shews himself an able negociator, and a consummate epicure. But, whilst he endeavours to fulfil the object of his mission, a great political event happens, and he returns to private life. In his new situation he reflects on his past conduct; he

finds that he has done too much to support his reputation of an epicure, and especially that he has continued too full a regimen: he feels the necessity of relaxation. He therefore determines to eat every morning a great dish of sorrel. He follows this regimen more than a year. At the termination of this time, he feels pain in the loins and ureters, and very soon passes with his urine a fusiform stone, six or seven lines long, by two thick. The colour of this small calculus was orange, its hardness great, and its surface unequal. He brings it to me. By its colour and hardness I thought I recognized the uric acid; but M. Despretz had the goodness to analyze it, and it was found to be composed of oxalate of lime, almost pure Before knowing the affair of his dish of sorrel, I own that I could not comprehend how a *bon vivant*, like my patient, could pass a stone of oxalate of lime. By his plumpness and healthy look, I would have supposed at once that he would have had gravel composed of uric acid; but, as soon as I knew the history of his sorrel, I could easily comprehend the origin of his disease, as well as the means of cure. I had merely to recommend to him to leave off the use of the sorrel.

But if in several circumstances we can thus explain the nature of stones passed with the urine, there are others of which no explanation can be given. Such is the species of gravel of which I have already seen two examples, and which I shall call *Pilous*, for the reason about to be mentioned.

In this disease, of which I have found no written example, the saline deposit of the urine affects two different forms: sometimes it is a peculiar white powder, which is mixed with a great number of white hairs, the length of which varies from one or two lines, to an inch or more; sometimes, on the contrary, the stones are whitish, of an unequal and very irregular form; their consistence is not very great; they even break easy enough between the fingers. But what is very surprising, the fragments arising from crushing them do not entirely separate; they hold to one another, and form a sort of cluster. When we endeavour to discover their common union, it is found to consist of very fine small hairs, intimately mingled with the saline mass, and making one body with it. When the mass is broken, the hairs remain entire, and keep the filaments united.

By maceration one may separate these hairs from their solid envelope, or from the white powder that surrounds them. They are then seen to differ little from ordinary hairs. They are only much finer, and of an ash-grey colour; but they are in such quantity, that it is difficult to detach the smallest morsel of the calculus, without perceiving one or two of the extremities of the hairs, and in certain points the surface of the calculus presents a velvetty appearance. The saline matter which enve-

lopes them, analyzed by M. Pelletier, is phosphate of lime, joined to a small quantity of phosphate of magnesia and uric acid.

The first time that I had occasion to observe this disease, it was in an old professor of the former university. He passed such a quantity of this mixture, that he filled vessels with it, of the capacity of two wine pints. The matter thus passed looked pretty much like magnesia in powder, and extremely rare, on account of the numerous hairs it contained. The weight therefore was very small, compared to the volume. The quantity of it that this old man had produced in a few years was truly extraordinary.

The second case of the *pilous* gravel, which has come to my knowledge, was about three years since, in an officer of the Royal Marine service. He passed not only white powder, but concretions, villous upon the surface, soft, and of variable volume. These concretions were friable; but the parcels procured by breaking them down, did not separate, and remained attached to one another by the small hairs.

The Academy may be convinced of these different characters, by the specimens which I send to it. The passage of these stones was generally painful, and sometimes arrested the flow of urine. What could be the origin of such a malady? According to the notions which I had derived from former researches, I could, to a certain degree, comprehend the excess of phosphate, and attribute it to the inordinate use of animal food. I found, indeed, in my experiments on nutrition, that if a dog is put, during a month, upon a regimen entirely free of azote, not only the uric acid, but even the phosphates, disappear from the urine.

With regard to the origin of the hairs, that are found in so great abundance in the midst of the stones, or saline deposit, I own that I have nothing to offer as to their production, but conjectures, much too vague to find a place here.

The important affair, however, was to find the means of preventing this kind of formation. I had nothing to guide me, how to act in preventing the production of the hair. I decided, therefore, on employing the means of treatment which I had frequently used with success for simple white gravel, or phosphate of lime and magnesia. The result was beyond my expectation. The two individuals of whom I have spoken, were perfectly cured in less than three months by the use of alkalies, and a regimen almost entirely vegetable.

It may be seen by the facts contained in this note, what benefit may be derived from the knowledge of the chemical composition of urinary concretions, and of their origin, and of what importance it would be for calculous persons, who are operated on by the breaking-down method, or otherwise, to have the stones extracted analysed, and to go back to the origin of their

formation. Then only could they hope to be completely cured of a disease, of which the extraction of stones from the bladder is only a dangerous palliative, and which leaves them, as we see every day, exposed to all the chances of a relapse. This defect of science deserves the attention of physiologists and physicians.

An Account of Scurvy, as it has appeared in some parts of the Russian Territory. By —— Lee, M. D. (From the London Medical and Physical Journal.)

Having been engaged, during a year's residence in the Crimea, and in the countries on the northern shores of the Black Sea, in collecting information respecting the climate and diseases of these extensive regions, I was much astonished to find that a species of land-scurvy had been prevailing extensively, not only in the hospitals of Nicolaef, Cherson, and Sevastopole, but in the military colonies established from the Dnieper to the Bessambia. In the period of its occurrence, and in many of the leading symptoms, it forcibly recalled to my mind the discussions which took place before the Committee of the House of Commons on the Scurvy which attacked those confined in the great Penitentiary some years ago. It is also a singular circumstance, mentioned by a Russian medical author, that, in 1786, at the siege of Azoff, a similar malady broke out, and committed great ravages in the Russian army; and, subsequently to this period, during their march to Ockcihoff, though their diet did not consist of salted provisions.

It is scarcely necessary to state, before giving any account of the particular symptoms of the disease, that the medical officers of the different hospitals are accustomed to use the term *Scurvy* in a more vague and extensive sense than we do in England: they apply it to many obscure cases of visceral derangement, and cachectic state of the system, with spongy and swelled gums; and, therefore, in looking over the registers of the hospitals, it appears that some of these are constantly present under the head of scurvy. There can be no doubt, however, that the disease had actually commenced in April 1823; the proportion of these cases with spongy gums being much larger than usual: but no cases of severity were then observed; and it was not till February 1824, that the disease appeared in its perfect form. Then most of the patients had the surface of the body covered, to a lesser or greater extent, with petechiæ, or vibices; the gums were spongy, and often copious hemorrhages took place from them; the teeth became loose, the breath extremely fetid,

and the countenance was sallow and bloated, and precisely similar to those afflicted with anasarca. Sometimes the inferior extremities were almost entirely covered with ecchymosis, or livid spots; but these were rarely observed on the arms or trunk of the body. Petechiae not unfrequently appeared all over the surface. Violent pains occurred in the limbs during the night, so as to deprive the patient of sleep; and the strongest narcotic medicines had no effect in alleviating the sufferings. A frequent occurrence in this complaint was the loss of the use of the limbs, and contractions of the tendons of the hams. In several this continued for three or four months, the patients being confined constantly to bed, and unable even to walk upon crutches; yet all these recovered ultimately.

It does not appear that any affection of the mucous membrane of the intestines existed, as diarrhea or dysentery did not generally occur. Slight edematous swellings of the lower extremities occasionally were witnessed. There was commonly, before the appearance of these symptoms, an unusual feeling of lassitude and depression of spirits. There was no thirst, and the appetite continued good in men during the whole course of the disease.

In the hospital at Nicolaef, only one case proved fatal, and this rather from a dose of calomel, which brought on salivation and diarrhea, than from the scurvy.

While this disease was prevailing, the buboes, in a syphilitic ward of the hospital, put on the scorbutic appearance. The skin, for several inches round, became black or livid, like the ecchymoses on the legs, in other cases. Hemorrhage in no case took place from these buboes. Other symptoms of scurvy manifested themselves in those affected with syphilis, and in some dropsical patients. The common ulcer in the hospital entirely escaped the disease. Two cases of pneumonia were brought into the hospital, and, though not bled profusely, they both speedily sunk. Many cases of pneumonia occurred in the military colonies, and all that were bled died. Afterwards large doses of emetic tartar were given with success.

It was observed that the disease was more frequent and severe among the convicts, and others under the influence of the depressing passions, than among the other seamen. Although this disease seldom proved fatal in these great naval hospitals, yet Mr Prout was informed, that many persons, particularly women, died of it in the great villages belonging to the crown, beyond the Dnieper.

In the cases of ophthalmia there was usually a black areola around the eye, and the vessels of the conjunctiva, instead of carrying a florid blood, were gorged with blood of a dark venous colour.

The treatment consisted chiefly in the internal use of mineral acids, vinegar, and bitters; and externally of fomentations with aromatic plants and vinegar to the legs. Citric acid is not to be found in this country.

I ought to have mentioned that this disease occurred not only in these hospitals, and in the military colonies, but in the Crimea, and in the governments of Cherson and Agehaterinorloff; in a word, in all that tract of country which had suffered from the visitations of the locusts. These formidable insects appeared first in the Crimea, in the summer of 1820, in small numbers, and are supposed to have crossed the narrow strait of the Bosphorus, from the Island of Tamar. At first they did little injury; and even the following summer many doubted if they were the true locust. In the summer of 1822, a season of great heat and drought, they appeared in vast numbers, not only in the Crimea, but all along the shores of the Black Sea. A prodigious army of them crossed the Danube, and ravaged Moldavia. In 1823, they appeared in still greater numbers, and devoured every thing of a vegetable nature that came in their way. It was precisely at this period that the disease commenced, and there can be little doubt that it ought to be attributed to a want of the usual supply of the sour crout and prepared cabbages, and other vegetables, for the winter. Every peasant in this country lays in an ample stock of these for the winter; but all green vegetables had attained an unusual price at this period, and it was in the power of few to make the usual provision.

In all the hospitals, the patients were supplied, as they usually are, with fresh animal food, bread, and grits for gruel, yet the disease was not arrested.

A short account of the climate of Crimea, and of the country lying along the northern shores of the Black Sea, may not be wholly without interest to those engaged in the improvement of medical topography. The impossibility of determining the precise nature of the climate of a country, from its geographical position alone, is very manifest, from what we witness in the Crimea. The southern coast, which is protected by the range of mountains running from west to east, enjoys one of the most mild and beautiful climates of Europe, being equally removed from those extremes of heat and cold, which prevail in the northern side of these mountains, and in all that extensive country between the Danube and the Don. Along this sheltered border of the Crimea, the vine, olive, pomegranate, and other plants of Southern Europe, grow luxuriantly in the open air. The thermometer rarely falls below zero (of Reaumur?) and the snow never remains upon the ground more than a few days during the whole course of the year.

At Synderopole, a distance of not more than forty English

miles on the other side, the thermometer has been seen as low as 23° of Reaumur below the freezing point, and the winters are usually extremely severe. In the imperial garden at Nehiter, on the coast, the thermometer rarely mounts above 25° of Reaumur; while in the interior, it frequently reaches 30°, and remains only a degree or two below this for many successive days. Yet, even upon the sea-shore, and still more in the interior, the changes of temperature are sudden and violent in the highest degree; and so well aware are Tartars of this, that they rarely quit home, even in the finest weather, without a thick mantle or cloak.

In various parts of the Crimea, along the course of some of the rivers, and at Kosloffund, near the isthmus of Perecope, there are marshes which emit exhalations of the most pernicious character. Fever, intermittent and remittent, and often of a bad form, is frequent in these districts; and, in particular seasons, the whole population appears to suffer. The pallid, sallow complexion of the people constantly reminded me of the appearance of those who live in the marshy districts on the shores of the Mediterranean, in Italy, and France.

This autumn (1825) the affection of the brain was unusually severe, and, in spite of the previous detraction of blood, ended in effusion into the ventricles, in several instances which came under my notice.

[*We cannot lay our hands on the original of this, and cannot, therefore, answer for its title, or the correctness of the copy.*]

Account of the Effects of the Bite of a wild Jackal in a rabid state, as the same occurred in the district of Kattywar, in the East Indies, in 1822. By M. Hewitt, Esq. Surgeon, Bombay Medical Establishment. Communicated by Dr Babington. (From the Medical Chirurgical Transactions, vol. xiii. part i. p. 264.)

In the year 1822, the First Battalion Fifth Regiment Bombay Native Infantry, of which I had the medical charge, was proceeding on field-service with a regiment of native cavalry in Kattywar. The latter were encamped about a quarter of a mile from the infantry. One night I was roused by a considerable noise and bustle in the cavalry lines, which I attributed to some of the horses breaking loose from their pickets. Next morning I learned, on inquiry, that, in that part of the lines chiefly occupied by the grass-cutters, they had been much annoyed by the visit of a jackal, an animal very common in the

neighbourhood of large villages in India. The night was dark, and the animal had got unobserved into the lines, and entered several huts of the camp followers, snapping and biting at every one he met with. Several of the men were roused by a bite of the animal either on their arms or feet, which were uncovered while asleep. The alarm was given, and the animal, after a chase up the lines, was at length killed; and this occasioned the hubbub I had heard, as before noticed. The bites of the animal had mostly drawn blood, but were very slight and superficial. Those I saw, being about a month after the incident, were like scratches, and dried up. The animal I understood was in a state of exhaustion, and much enfeebled from disease and starvation. It was not known to be mad, nor are the natives acquainted with the consequences of the bite of a rabid animal. The matter, therefore, passed off as a common incident of the day.

About a month after this occurrence, circumstances presented tending to shew that the jackal was in a rabid state, and that hydrophobia resulted from its bites. Such of these as came under my observation I have to notice in the following cases.

CASE I.

My native hospital-assistant informed me that a young man was lying dead, a short distance from my tent, in the open fields. I went along with him to see the body, with a view to ascertain the cause of his death. The deceased, a native, was a robust young man, who appeared to have died of suffocation. There was great contraction of the glottis, as if brought on by spasm; the throat was swollen, face rather flushed. No marks of violence being observable, his friends were called on and interrogated as to what information they could afford to account for his sudden death. They mentioned, that lately he had shown strange symptoms of madness, complained of a sense of strangulation when he attempted to swallow, and had a horror at the sight of water; and, fearful of being suffocated, he had before run out to the open fields. On being questioned as to his having been bit by any dog, they replied that he had not, but spoke of his being bit in the face by the jackal on the night that one was killed in camp, before which he never complained. He had been gradually getting worse for the last few days past, and they did not suspect the cause.

CASE II.

A few days *previous* to finding this young man lying dead in the fields, I had a native, aged about 30, under treatment, labouring under extreme dejection and nervous excitement. The

glottis appeared rigid, the throat was much complained of, deglutition difficult and painful. Conceiving the case to be chiefly an affection of the fauces, local applications were made to the throat, and the usual remedies were ordered.

On the second day he refused to take any medicine, and his nervous irritability increasing, he was carried off in convulsions that same night.

My native assistant, who had never seen a case of hydrophobia before this, or known its symptoms, on the particulars of the former case being related in his hearing, now, for the first time, stated there was a great coincidence of symptoms in the two cases. He remembered the deceased native under treatment for an affection of the fauces, that he shewed a great dread of water, and would not swallow the medicine because it was in a liquid state, and that he was under frightful imaginations about trifles when disturbed, &c. I ordered him to inquire of the friends and companions of the deceased, if he had been bitten on the night in question by the jackal, and the result was that he had, and had shewn the part bitten to several, relating the circumstance.

CASE III.

The effect of the bites of the jackal in the above instances began to excite some attention, more especially when another native, a middle-aged man, was found early one morning about this time dead, and without any marks of violence about him. His appearance, from a few particles of blood found on the grass, led to a belief that he had died convulsed. Inquiry as to the cause was set on foot, and it was clearly ascertained that he had been bitten by the jackal.

CASE IV.

Some of those that had been bitten were now induced to apply for medical relief, when the symptoms shewed themselves. My native assistant informed me that a woman, who had been bitten by the jackal, was now suffering under symptoms somewhat similar to those observed in the preceding cases, and wished me to see her. I was glad to find an opportunity of arresting the disease if possible, and ordered her to be brought up immediately. She was under great anxiety, and very restless, had a spasmodic contraction of the glottis, great oppression at the pit of the stomach, and sense of suffocation; on being exposed to the air, to look at her, her countenance shewed she was under great alarm, and she covered her face in a hurried manner. Her friends said she could not take any kind of drink, and could with difficulty be made to swallow any food. The symptoms had been coming on some few days previous to their

applying for medical aid. She pointed to her throat and pit of the stomach, when asked where she felt pain or uneasiness. Being satisfied the symptoms were those of hydrophobia, and that the affection of the glottis was the most dangerous, I ordered the patient to have her throat and epigastric region rubbed with strong mercurial ointment, mixed with a small portion of camphor, and the friction to be kept up for an hour at a time, without regard to quantity expended; the throat to be kept warm with flannels after the frictions, which were to be as often as could be done without distressing the patient too much. To hasten the effect of the mercurial course on the salivary glands, ten grains of calomel, mixed in a little powdered sugar, were ordered to be sprinkled on the tongue, and given every eight hours till further orders.

To bring on a flow of saliva and discharge from the salivary glands, a mixture of aqua ammoniæ, ol. oliv. and aq. pur., in the usual proportions, to form a strong stimulating expectorant, was ordered to be given by tea spoonfuls, which, it appears, was effected. These remedies were pushed as far as circumstances would admit, and, on the third day, a flow of saliva was effected, which was the object in view. The mercurials were regulated and withdrawn as salivation advanced; and, in proportion as the saliva ran from the mouth, the deglutition became less difficult, the dread of swallowing and the pain at the pit of the stomach wore off; and her mind became composed and easy, as the danger was removed.

In the course of twelve days all symptoms were entirely gone; the mouth, however, remained sore for some time afterwards. The woman was suckling.

CASE V.

A man, about 25 years old, applied for relief under extreme mental anxiety. His wild appearance and fears, and refusing to take some medicine offered him, the tremor he was in at the thoughts of swallowing, and the information that he was one who had been bitten by the jackal, confirmed my suspicion of his case being of the same description as the others.

He shewed the first symptoms about ten o'clock in the morning after he came to me, but had been for some days getting dull and melancholy. The plan of treatment was precisely as ordered in the former case, but I soon found the disease was much farther advanced, as deglutition was entirely suspended, and the least attempt to make him swallow, brought on the greatest disturbance of the abdominal muscles and diaphragm, and he became almost frantic. He vomited slime and watery

matter two or three times. He was glad to cover himself up from the air, and the sight of objects; and he had a violent thirst. The symptoms increased rapidly, and he became so restless as to be kept under restraint by attendants, to prevent his running about and doing mischief. At intervals he was quite rational, and, in a hurried way of talking, assured me he could not, from what he felt, last out long. He was soothed, and the hopes of a cure held out by his becoming resigned and quiet; but on the next day, at four o'clock, the continual restlessness of the patient, and the "burning sensation of thirst," as he called it, had so exhausted him, that I despaired of his living long enough to get the salivary glands affected by frictions, which was all that we could do under his unruly and restless state.

The thirst being so intolerable, he was resolved to make a desperate attempt to get down some gruel, which, when he had got a spoonful in the throat, brought on so violent a convulsion as to carry him off. He was not in the least affected by the mercurial frictions, or the calomel he might have got down.

I regretted this failure very much. Had he lived long enough to have had a complete salivation, I should have had sanguine expectations of his doing well, from the result of the former case.

The same characteristic symptoms were conspicuous in all the five cases. The affection of the glottis was always predominant, and next that of the pit of the stomach. Deglutition was always much dreaded and difficult, and great mental anxiety was present.

Three other persons presented themselves to say they had been bitten, and shewed the marks or scars of the bites, which (except in one instance, which was a foul looking sore) had all dried up. No symptoms had appeared. They left their names and places of abode with my assistant, that we might be apprised, in case any should subsequently become affected.

The mouth and jaws of the jackal when killed were found to be covered with frothy saliva. The liver was examined, and found quite diseased and rotten, with pus in some parts from small abscesses.

Blackheath,
June 20. 1825.

PRACTICE OF SURGERY.

On the Tonic Treatment of Inflammation. By Thomas Pridgin Teale, Surgeon to the Leeds Public Dispensary.

THE state of the vascular system during inflammation, still remains a subject of dispute. Two circumstances, however, are universally admitted:—

1*st*, That the immediate seat of inflammation is in the *capillaries.*

2*dly*, That the capillaries of the inflamed part are in a state of *dilatation*, containing a larger quantity of blood than natural; but with respect to the peculiar action of these vessels, which gives rise to the state of dilatation, a great discrepancy of opinion exists. On the one hand, it is urged, that the dilatation is produced by an increased action of the capillaries; on the other, that it is the result of a debilitated or diminished action.

How any one can suppose that a muscular tube, by having its action increased, can have its diameter enlarged, I am at a loss to imagine. On the contrary, the doctrine which admits the dilated state of the capillaries to be the result of debility or a diminished action, accords with what one would *à priori* suppose; and, moreover, admits of direct proof by experiment.

Vacca, who published at Florence in 1765, is said to have been the first who attributed the phenomena of inflammation to debility. He maintained that the dilated state of the capillaries could only arise from debility, and consequent diminished resistance.

Towards the end of the last century, Dr Lubbock of Norwich is reported by Dr Thomson to have entertained a similar opinion, considering that an artery, as a hollow muscle, could have its cavity enlarged *only by debility.* And about the same time, Dr Allan, in his physiological lectures in Edinburgh, maintained, according to Dr Thomson, "that the vessels which are the actual seat of inflammation, contract with *less force* than those vessels nearer the heart, from which they receive their supply of blood."*

During the present century, these hypotheses have received very great support from the scientific inquiries of various experimentalists; and we are indebted to Dr Wilson Philip, Dr Thomson, and Dr Hastings, for the discovery of many interesting facts relative to this disputed point of pathology.

* Thomson on Inflammation.

In order to ascertain how far an increased action of the capillaries gives rise to the phenomena of inflammation, Dr W. Philip instituted the following experiment, which I shall relate in his own words:—"Having adapted the web of a frog's foot to a microscope, I now and then observed the velocity of the circulation for some minutes, which, during this time, continued, as far as I could judge, the same. I then wetted the foot with distilled spirits; and, in a few seconds, observed the blood in all the vessels of the web moved with a wonderfully increased velocity, which, as I constantly kept the web moist with spirits, continued, as long as I observed it, ten minutes or a quarter of an hour. But during no part of the time could I perceive the slightest symptom of inflammation, either with or without the microscope. The vessels, instead of appearing redder and more turgid, were evidently *paler and smaller* than before the application of the spirits."*

The result of this experiment was afterwards verified in repeated instances, by Dr Thomson, and more recently by Dr Hastings. I therefore consider that we are fully warranted in concluding, that *an increased action of the capillaries does not give rise to the phenomena of inflammation.*

Dr W. Philip next submitted an inflamed part to microscopic observation. He relates the experiment in the following manner:—"An inflammation had been excited, I do not know how, in the web of a frog's foot. Having applied it to the microscope, I found the vessels of the part greatly dilated, and the motion of the blood extremely languid. In several places, where the inflammation was greatest, it had ceased altogether. It was at once evident, on observing the part through the microscope, that where the inflammation was greatest, the vessels were most dilated, and the motion of the blood was slowest." "While I was viewing the inflamed web, it occurred, that if I could succeed in stimulating its vessels to action, and thus remove the inflammation, which, by this time, I was thoroughly convinced depended on their debility, this would be an additional proof of the doctrine before us. With this view, I wetted the inflamed web with distilled spirits, at the same time throwing upon it the concentrated rays of the sun from the speculum of the microscope. The blood, in all the vessels except in those of the most inflamed part, began to move with greater velocity; and in proportion as this took place, the diameters of the vessels were diminished, and the redness became evidently less remarkable, the web seemed paler, and the interstices of the vessels became less opaque."†

* Dr W. Philip on Febrile Diseases, vol. iii. p. 43.

† Ibid., vol. iii. p. 47.

I shall content myself by relating another experiment from the valuable treatise of Dr Hastings:—

"By the immersion of a frog's foot in water of 110°, vesicles were produced, the vessels became dilated, the blood moved slowly; and the whole web was very red. Oil of turpentine, mixed with basilicon, to prevent evaporation, was spread over the web, and retained there for six minutes. The motion of the blood became quicker in several capillaries, which contracted to nearly their natural size. The oil of turpentine was reapplied for some minutes, which caused the blood to move more quickly, and the vessels to contract. At the expiration of an hour, (the oil of turpentine, during that space of time, having been assiduously applied), the bloodvessels in every part of the web were contracted, the motion of the blood was quickened, and the inflammation subsided." *

From these experiments, it appears that the capillaries, so far from being in a state of increased activity, are actually in a state of debility; and their contractile power is so much diminished, that the blood which they contain moves through them with less velocity; and, in extreme degrees of inflammation, its motion is completely suspended. It is moreover ascertained, that, by exciting these debilitated vessels to increased action, the appearances of inflammation are removed.

These are not the result of a few and inaccurate experiments; they are found to be of universal occurrence, and are confirmed by different individuals, whose experiments have been frequently repeated and performed, under a great variety of circumstances.

With respect to the action of the heart and large vessels, during inflammation, there is less contrariety of opinion; since they are more readily made the subject of ordinary observation.

It is universally allowed, that, during inflammation, the action of the heart is very frequently greater than natural; but this increased action of the heart is not a necessary attendant upon inflammation. The state of the capillaries constituting inflammation, may exist without any increase in the heart's action. In like manner, the increased action of the arterial trunks, as observed in the artery at the wrist, when the finger is inflamed, in the carotids during inflammation of the encephalon, &c. although a frequent attendant upon inflammation, yet does not invariably exist.

Whenever this increased action of the heart and arterial† trunks occurs, it is obvious that it must have the effect of aggra-

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* Dr Hastings's Treatise on Inflammation of the Mucous Membrane of the Lungs, p. 89.

† The term "arterial trunks" is employed by way of distinction from the "capillaries."

vating the disease, by increasing the momentum of the blood, and propelling it with greater violence into the capillaries, which are already in such a debilitated state as to be unable to resist even the natural impetus of the blood.

From what has been said, it is evident that our treatment of inflammation must consist either in diminishing the *vis a tergo*, and thereby allowing time for the capillaries spontaneously to regain their natural tone, or by directly stimulating them to increased action.

To fulfil the former indication, general bloodletting is perhaps the most powerful mode we possess. By many, it is relied upon not only as their chief, but even as their sole remedy, in the treatment of inflammation. I by no means wish to depreciate the good effects of general bloodletting in inflammation; it is often a remedy of the greatest value; but if we possess other remedies which produce equal, if not greater benefit, and whose effects upon the constitution are less injurious than those produced by the abstraction of blood, certainly it is our duty to employ them. Every one, I think, will admit, that the abstraction of blood, even in moderate quantity, is often attended with injury. A person in ordinary health, if deprived of a few ounces of blood, is often affected by slight causes of disease, which, without such previous evacuation, he would have borne with impunity. Copious abstraction of blood, even for the removal of disease, is frequently followed by serious consequences, and gives rise to a lingering convalescence, to irregular actions of the vascular system, and to extreme nervous irritability, rendering the system for weeks and months an easy prey to the slightest exciting causes of disease. And in the more aggravated forms of inflammation, how repeatedly do we find that venesection, however promptly and copiously employed, is totally ineffectual in arresting that state of the capillary vessels which constitutes inflammation. For instance, when the iris is inflamed, venesection may often be largely employed and repeated, until life be endangered from loss of blood, yet the capillaries still continue in their morbid state; they proceed to pour out their unnatural secretions, and vision is ultimately destroyed; and in inflammation of the brain and its membranes, we are often compelled to witness the inefficacy of sanguineous depletion in arresting the morbid condition of the extreme vessels.

Since, therefore, the attraction of blood, although it is allowed to be a powerful remedy, is not free from objection, but is frequently attended with injurious consequences, it is right that we should adopt such means as may diminish the necessity for bloodletting. This desirable object may be obtained, by directing our treatment more particularly to the capillaries, the immediate seat of disease. Several means immediately directed to

the inflamed part are in daily use. These are such as diminish the increased nervous irritability of the part, and consist in the application of heat and moisture, of cold, and of mineral and vegetable sedatives. Another object in the local treatment is the unloading of the dilated capillaries, by local bloodletting.

In addition to these means, I would recommend the direct application of stimulants to the debilitated capillaries. When the *vis a tergo* has already been reduced by venesection, and the dilated vessels unloaded by local bloodletting, the application of stimulants will greatly assist the natural powers in restoring tone to the capillary vessels, and producing their contraction; and, in numerous instances, the application of stimulants alone will be able to produce these desirable effects, even without the previous abstraction of blood, thereby superseding the necessity for bloodletting.

For the purpose of contracting or giving tone to the debilitated capillaries, stimulants may be applied either to their internal or their external surface.

By applying stimulants to the surface of an inflamed membrane, we cause their action to be exerted on the external surface of the capillaries; and by introducing stimulants into the blood through the medium of the absorbents, we can cause them to exert their influence on the internal surface of the extreme vessels.

I shall, in the *first* place, consider the action of stimulants externally applied, afterwards the effect of certain stimulants when absorbed into the circulation.

The effect of different stimulants, when applied to inflamed surfaces, varies considerably; some producing great pain and irritation, with very little contraction of the capillaries, whilst the application of others is attended with but slight pain, and causes a decided contraction of the dilated vessels. As remedies of the latter kind, a great variety of stimulants may be employed; but as my present object is not to describe the effects peculiar to different stimulants, but merely to illustrate what I have termed the "tonic treatment of inflammation," I shall content myself by bringing forward, in illustration, the action of one remedy only, which is the sulphate of copper; and shall confine myself to a statement of the results which I have observed from its application in inflammation of the external tunics of the eye.

Sulphate of Copper in Inflammation of the external tunics of the Eye.

I had been, for a considerable time, in the habit of applying the sulphate of copper in substance to the conjunctiva in certain

forms of chronic inflammation; and from considering that *acute*, as well as chronic inflammation, consists essentially in a debility of the capillaries, I was induced to employ that stimulant, upon the principles already adverted to, in the acute stage, and more violent forms, of inflammation of the conjunctiva, sclerotica and cornea.

The mode in which it has been employed, consists in lightly sweeping a crystal of that salt three or four times over the everted lower palpebra; the eyelid is then replaced, and the lachrymal secretion soon distributes the sulphate over the whole globe.

The pain following the application, generally subsides in a few minutes; and when the pain is of longer duration, relief may be obtained by fomenting with hot water, and also by frequently separating the lids so as to allow the escape of the tears, which, when confined, convey the sensation of scalding. In a few instances, where these means have failed in giving relief, ease has been almost instantaneously procured, by dropping a little milk or oil upon the conjunctiva.

In many instances, the vessels may be seen contracting in size, and the interstices between them becoming paler, immediately after the application of the sulphate; but more frequently it is followed by a slight increase of redness, and, in children, the redness is often still farther augmented by violently rubbing the eyes; after a few hours, however, the increased redness subsides, and the vessels become gradually contracted; the original pain attendant on the inflammation abates, the intolerance of light is diminished, and, on the following day, a decided improvement is observable. If the irritation produced by the application has been slight, the sulphate may be applied daily; if severe, it may be repeated every second or third day.

In the purulent ophthalmia both in infants and adults, I have seen this application employed in every stage with the greatest benefit; if applied in the commencement of the disease, it frequently arrests its progress; and in the more advanced stages, although it does not immediately put a stop to the disease, yet, as far as I have observed, it mitigates its violence, and renders its future progress mild and favourable. If applied before the cornea has become dusky, or has undergone those changes which are considered the precursors or commencement of sloughing, I believe the formation of a slough will almost invariably be prevented; and even when the indications of sloughing are already evident, the sulphate may still be employed with advantage, and its application will, in many instances, confine the sloughing process to the superficial layers of the cornea, and thereby prevent the anterior chamber being opened. Another advantage attendant upon this treatment of purulent ophthalmia is the prevention of the granular state of the conjunctiva. The same advan-

tages are observed from the application of the sulphate in catarrhal inflammation of the conjunctiva, and in those inflammations which arise from external irritation or violence. Great benefit has been derived from the use of the sulphate in various morbid states of the cornea; as, for instance, when the cornea has become permeated by red vessels, in chronic and acute ulcers, particularly the acute marginal ulcer of the cornea. It has also been successfully employed in those deep penetrating ulcers, where the aqueous humour protrudes the thin membrane lining the inner surface of the cornea. In one instance, where the ulcer had penetrated into the anterior chamber, and the iris had protruded, the application was attended with considerable irritation, and the inflammation was certainly aggravated.

The cases to which I have alluded, in which the treatment by the sulphate of copper is decidedly successful, and which might, if we were desirous of it, be safely entrusted to this remedy alone, are such as are unconnected with any chronick disorder of the digestive organs. When, however, those marks of constitutional disorder exist, which denote what is termed the strumous diathesis, it would be absurd to expect a permanent cure from any local application; and in that numerous class of inflammatory diseases confusedly grouped under the terms scrofulous or strumous ophthalmia, it has been necessary to adopt, in addition to the local treatment, such means as are calculated to relieve a chronick or subacute inflammation of the gastro-intestinal mucous membrane, and its attendant disorders. But even in these cases, the local treatment has had its decided advantages. By the repeated application of the sulphate, the conjunctival inflammation has been kept moderate: its most troublesome symptoms, particularly the intolerance of light, have been alleviated, and a truce has been obtained for the administration of internal remedies. But although a temporary advantage be thus obtained, yet the tendency to relapse must, of course, continue, until the chronick disorder of the digestive organs be relieved.

Having observed the effects of the sulphate of copper in a very great variety of cases of ophthalmic disease, both acute and chronic, in private practice and at the Dispensary, I have been induced to adopt the opinion, that it may be employed, not only with safety, but with advantage, in every variety, and every stage, both of chronic and acute inflammation of the external tunics of the eye*. Being desirous of ascertaining the precise effect of the sulphate of copper in inflammation of the conjunctiva, I employed it in a great number of cases, without having

* If I may except the case already alluded to of protrusion of the iris after sloughing of the cornea.

recourse to other remedies; and from repeated observation, I am satisfied that the application of the sulphate, in a great proportion of cases, is alone sufficient for the removal of the disease. I would not, however, be understood to recommend it as an exclusive remedy, for I am equally convinced, that its beneficial effects are greatly increased by the co-operation of other remedies. The application of the sulphate does not exclude the employment of leeches, nor of counter irritants, neither does it forbid the exhibition of such internal medicines as may be deemed appropriate; and so far from recommending it to be exclusively employed, I am only anxious to claim for it a station as a highly valuable and powerful adjuvant in the treatment of ophthalmic disease.

It is with great pleasure I can add the testimony of my colleagues Mr Cass, and Mr J. P. Garlick, in favour of the application of the sulphate of copper, in inflammation of the external tunics of the eye. These gentlemen have extensively employed it, not only amongst the patients admitted under their care at the Dispensary, but also in private practice. In a note which I have received from Mr Garlick, he observes: "In expressing my opinion of the sulphate of copper as a remedy, I need only say that I have been much gratified to witness the very marked advantage almost uniformly produced by its application to the conjunctiva, even in the most acute forms of inflammation of that membrane."

Mercury in Inflammatory Diseases.

When inflammation is seated in any of the internal structures of the body, we still have it in our power to adopt the same principle of treatment, by introducing stimulants into the blood through the medium of the absorbents. We fortunately possess certain stimulants, which, when absorbed, have the effect of stimulating the debilitated capillaries, without materially increasing the action of the heart and large vessels. Such I am inclined to consider the action of mercury, turpentine, quinine, and some others *; and, upon this principle, I have, for a considerable time, employed these remedies in the treatment of many inflammatory diseases.

Mercury has now become an established remedy in the treatment of inflammation of various structures, and its beneficial effects are beautifully illustrated in inflammation of the iris. In severe cases of iritis, the sanguineous depletion may often be carried even to the extent of endangering life, and still the morbid condition of the capillaries will continue unsubdued; where-

* The mineral and vegetable acids, &c.

as, when mercury is employed, as soon as the traces of mercurial action are observable in the mouth, and sometimes even before the mouth has become sore, the unhealthy action is arrested, the deposition of organizable matter ceases, and the absorbents speedily remove the morbid secretions that have been deposited.

The salutary effects of mercury are repeatedly witnessed in inflammations of the larynx, periosteum, and numerous other structures. In the Pathological Record of the Epidemic at the Millbank Penitentiary, by Dr P. M. Latham, we have numerous proofs of the power of this remedy in arresting inflammation of the intestinal mucous membrane.

In no class of diseases have the powers of mercury appeared to me more decidedly advantageous than in inflammation of the brain and its membranes. I have repeatedly witnessed the stupor, and the paralysis of sensation and voluntary motion, subside under the employment of mercury, and the first symptoms of amendment have been simultaneous with the appearance of mercurial action on the gums or salivary glands; and in cases where I inferred that the inflammation was not confined to the membranes of the brain, but that the cerebral substance also was inflamed, and in a state of *ramollissement* (a condition which I considered to be denoted by the permanent flexion and rigidity of the extremities), I have seen the same decided benefit resulting from the employment of mercury. As soon as the mouth has become sore, a gradual relaxation of the rigid muscles has supervened, even after the rigidity and flexion of the extremities have existed for a week, to such a degree that the heels were kept inseparably applied to the nates, and the hands to the shoulders.

Spirit of Turpentine in Inflammatory Diseases.

The next remedy which I shall consider as exerting a similar action to mercury, in inflammatory diseases, is *turpentine.*

At the time the spirit of turpentine was first recommended in the treatment of puerperal fever, it was regarded by many as nothing less than madness to employ so powerful a stimulant in a disease so decidedly inflammatory. Such a prejudice against its employment, originated in the prevailing opinion that the *capillaries*, as well as the *heart and large vessels*, were in a state of increased action; but it is proved that the capillaries are in a state of atony; consequently, a stimulant which can rouse the debilitated vessels to increased action, without, at the same time, increasing the *vis à tergo*, must be the great desideratum in the treatment, and I have already stated that I consider this to be the action of turpentine.

That the employment of turpentine is beneficial in many inflammatory diseases we have abundant proof. Instances of inflammation, occurring during the puerperal state, which have been successfully treated by turpentine, are numerously recorded. Its good effects in inflammation of the mucous membrane of the stomach and intestines, I have repeatedly witnessed, particularly during the epidemic which prevailed in the autumn of 1825. In the advanced stages of typhus, when the mucous membrane of the ilium is almost invariably inflamed and ulcerated, I have seen much benefit derived from the use of turpentine, and I consider that its employment will be found beneficial in those extensive inflammations which occur after the operation for hernia in old and debilitated subjects, where bleeding would be inadmissible, and also in similar subjects who have undergone the operation of lithotomy, and are labouring under extensive inflammation of the cellular tissue of the pelvis and abdominal parietes.

The rapidity with which turpentine is absorbed by the skin, greatly increases the value of the remedy. In slight cases it is often sufficient to apply the spirit of turpentine externally to the abdomen and extremities. The skin may be bathed with it for the space of ten or fifteen minutes, and the application may be repeated every third or fourth hour; if much irritation in the skin is produced, it may be diluted with oil. In more violent degrees inflammation, particularly when seated in the peritoneum, in addition to the external application, the turpentine may be given internally; and as our object is to promote its absorption, the doses should be small (half a drachm or a drachm every third or fourth hour) so as to prevent the occurrence of violent diarrhea.

Quinine in Inflammatory Diseases.

The action of *quinine* I consider analogous to the preceding. For ages cinchona has been given in rheumatic and gouty inflammation, and also in those subacute inflammations of the mucous membrane of the intestines, of the bronchial membrane, and of the brain and its membranes, which diseases so often occur associated under the form of typhus. And although the employment of cinchona, in these diseases, has, theoretically, been considered absurd, yet I consider it may be employed upon principles strictly scientific; and from repeated observation I am convinced, that it may be used with advantage, particularly under the more convenient and elegant form of sulphate of quinine.

In confirmation of the opinion which I have advanced, that the effect of mercury, turpentine, and quinine is to stimulate or give tone to the *capillary* vessels, we may adduce the action of

these remedies in another disease, which resembles inflammation, in being a peculiar debility of the capillaries. The disease to which I allude, is purpura, in which the coats of the extreme vessels have their cohesion so much diminished, as to allow them to be lacerated by the ordinary impetus of the blood. Cinchona has long been employed in this disease, and in slight cases I dare say it may be beneficial. In the more violent forms of purpura, attended with copious hemorrhage from the mucous surface, I have frequently witnessed the most salutary effects attending the employment of turpentine and mercury, particularly the latter.

In the preceding observations I can lay claim to but little novelty in the remedies I have mentioned. My object has been to attempt an explanation of the action of certain medicines, which undoubtedly have been advantageously employed in inflammatory diseases, but whose action has been thought mysterious, and whose employment has consequently been little better than empiricism. I have also been anxious that our attention, in the treatment of inflammation, should be directed towards restoring the tone of the capillary vessels, since the means for effecting this object can be employed either exclusively of other remedies, or conjointly with such means as tend to lessen the *vis a tergo*, or to diminish the increased nervous irritability of the inflamed part of the general system.

22, Albion Street, Leeds,
August 21. 1826.

Extirpation of the Uterus. By Professor Recamier.

THIS operation is detailed by Professor Recamier in the *Revue Medicale* for December 1825, and was undertaken by the author in consequence of the uterus being affected with fungus. Madam C. æt. 60, a woman of low stature, good constitution, and sufficient *embonpoint*; menstruated at twelve, married at sixteen, and was the mother of six children. She suffered severely in all her labours; and her second, which happened when she was twenty-two years of age, was followed by prolapsus uteri. This complaint continued to increase, and was productive of considerable uneasiness during any exertion. The general health was good, and the patient was very corpulent. At forty-five, the catamenia became unusually copious; and two years afterwards they ceased, but were succeeded by frequent uterine affusions. In her fiftieth year, she was affected with leucorrhœal discharges, which were slightly tinged with blood;

and when she had attained the age of fifty-six, these infiltrations became brown and fetid. At the age of fifty-nine, the flow from the parts was very abundant, and so offensive as to prove unpleasant to those around her; the descent of the womb increased, accompanied with occasional discharges of blood, but without lancinating pains. During the last three years, she experienced from time to time slight accessions of fever, and her corpulency greatly disappeared. In October 1825, she at last determined to consult the author. M. Marjolin was called in to consultation, and the operation was appointed to take place on the 14th of October.

When the patient was requested to bear down, as in the evacuation of the bowels, a tumor presented itself at the vulva, which, on being drawn up a little, was dragged beyond the parts; and the uterus, into which it was implanted, descended after it to the entrance of the vagina. The tumor was of a cylindrical shape, three inches in length, about an inch and a half in diameter, irregular, and ulcerated over its whole surface, of a brownish aspect, covered with very fetid pus, not bleeding, but very painful to the touch. Its base, which was large, was implanted into the lower part of the uterus, but presented nothing like a neck or contracted portion. The uterus itself, at its lower part, was thicker and larger than natural; and no traces of its cervix or aperture was to be observed. That portion of the vagina which protected the lower third of the uterus, was covered with ulcerations; the rest was healthy. A sound introduced into the bladder, could be easily distinguished by a finger placed in the rectum, which shewed that there was no other organ interposed.

The instruments employed in this operation were a pair of double silver canulas, and a long, slightly curved needle, mounted on a straight handle. The eye of the needle was placed near its point, and it was armed with a strong waxed double ligature. The position of the patient was the same as in the lateral operation for lithotomy.

When the patient was requested to bear down, and a little extracting force applied to the tumour, all of it, and nearly the whole body of the uterus also, were brought beyond the vulva. The operators then (for M. Recamier and M. Marjolin acted in concert), easily grasped the vagina between the fundus uteri and the pubic arch. The parietes of the vagina were very thin, and the operators, by deliberate examination, convinced themselves that there was nothing lodged in this canal. About an inch above the uterus, the vagina was transfixed from behind forward by the needle, the point of which was directed in its course by the fingers of the left hand: the ligature was divided in the middle, disengaged from the instrument, and the latter

withdrawn from behind. This division produced two ligatures, each destined to include its respective half of the vagina. The ligatures were entrusted to assistants, while a catheter was introduced into the bladder, and a finger into the rectum; and as no part of the instrument was felt denuded, nor the little urine that escaped by it tinctured with blood, it was concluded that both passages had escaped unhurt. By means of the double silver canula, each ligature was secured in the usual manner on its respective side of the vagina. This part of the operation was followed by excessive pain, as the ligatures were at first drawn too tight.

The patient was ordered a soothing draught, to have the abdomen fomented, and a grain of opium at bedtime. Three hours after the operation, from pain having continued unabated, vomiting having supervened, with small pulse, and cold perspiration, the ligatures were a little slackened, with relief. In an hour, however, all the unpleasant symptoms returned, when it was deemed expedient to relax the ligatures completely, and to apply thirty leeches to the hypogastric region; and a total cessation of pain followed. At 10 P. M. the ligatures were again slightly tightened, and followed by acute pain, which subsided in a few hours. The patient passed a tolerable night, and slept five hours. On the 15th, both the uterus and cancerous tumour were somewhat swelled; the latter discharged a little blood. M. Recamier applied a third ligature, which was placed nearer the pubes than the two former, and embraced the whole pedicle. This, also, was succeeded by symptoms of strangulation, but they subsided spontaneously. Twenty-five leeches were applied to the hypogastrium: the patient felt better, and slept four hours the following night. The ligatures were drawn a little firmer every day afterwards, and this was always attended with pain, which generally subsided without any remedy. The uneasiness was referred sometimes to the anus, at other times to the right kidney. Sometimes these pains were attended with severe bearing-down efforts, exactly as in labour.

On the 17th, the patient complained of slight pain on pressure in the course of the right broad ligament and lumbar region of the same side; and on the 22d the left side was similarly affected, but to a greater extent, even from slight pressure. These complaints were attended by a little hiccough, and slight frequency of pulse; but there was neither thirst nor heat of skin. These symptoms were removed by one moderate detraction of blood, the reiterated application of leeches, and warm fomentations, the protracted warm bath, an enema daily, and a grain and a half of opium at bedtime. On the 23d, the last ligature applied was removed, and one of very pliant silver wire substituted. The 26th, patient had no uneasiness in the ab-

domen, even on pressure; but the pain in the track of the broad ligaments and loins continued almost as acute as the first few days after the operation.

27th October, being the 13th day after the operation.—The uterus, by continuing to enlarge until this period, had acquired the size of a clenched hand, was of a rounded form, very red, and covered with false membranes. The cancerous swelling had shrunk, its appearance was changed; it now formed a mere greyish excrescence, of an inch and a half in length, possessed of little sensibility. In a few minutes after the metallic ligature was used, the uterine tumour became livid, but no change was produced on the other swelling. The uterus was quite black on the 28th, and M. Recamier pushed a strong needle two inches deep into its substance, without producing pain; but it was followed by a slight discharge of dark fluid blood. The 30th, being the third day of the appearance of gangrene, the uterus exhibited signs of putrefaction, and, notwithstanding the application of the chloruret of soda, it emitted a putrid odour. The valva was excoriated. M. Recamier being afraid lest the tumour should take a long time to drop off, and that the putrid matter might produce inflammation of the vulva and other surrounding parts, resolved to remove it.

The section of the tumour was performed about an inch below the ligatures; the abdomen remained free from pain; and the patient had a good appetite. She was ordered a warm bath daily, to have the vagina syringed, and to be allowed nutritive diet.

On the 11th November, being the 29th day of the operation, and the 15th of the gangrene, the silver knot-closers, ligatures, and remaining portion of the pedicle, dropped off. On the same day the patient sat up for an hour and a half, and on the 12th for six hours; but, on the evening of this day, she was seized with such violent bearing down efforts, that the urine and feces escaped involuntarily. These pains continued for four hours, and were only suspended by the exhibition of one grain of opium, and a compress of lint, immersed in the tincture of opium, advanced into the bottom of the vagina.

The vagina was examined by means of the speculum, and a wound of four lines in length by two in breadth, was seen towards its bottom. On the following day, the woman left her bed, her strength increased rapidly, and she experienced no further suffering.

When the tumour was examined, scarcely any change was ascertained to have taken place in the structure of the uterus; it was not thicker than natural; and its great size was owing to swelling of that part of the vagina which covered it.

In the laboured reflections of M. Recamier on this interest-

ing case, there are several points highly deserving attention. He thinks we are here furnished with an undeniable proof that a patient affected with *carcinoma uteri* may be successfully relieved, without any chance of the disease returning; and that the possibility of extirpating the uterus, *with safety*, in cases of prolapsus, is completely established. An allusion is also made to the bearing down efforts experienced by the patient in the present instance, even after the uterus had been removed, which is ascribed to the influence of the ganglionic system of nerves. Our author compares this to what is often experienced by an individual who has suffered the amputation of a limb,—a sensation of the presence of the extremity being still conveyed to the sufferer occasionally for some time after it has in fact ceased to exist, which he attributes to the power of the cerebral nerves.

Extirpation of a Tumour in the Neck, which was situated beneath the Digastric Fascia, and behind the Submaxillary Gland. By Benjamin Bell, Surgeon in Edinburgh.

My Dear Sir,

My father, Mr George Bell, communicated to you some time ago, a case of tumour of great size, which he removed from the lateral part of the neck. I now take the liberty of sending you an account of one which was situated under the deep *cervical fascia* and *submaxillary gland.*

30th October 1826.—The subject of the following case (Thomas Herbert), is a hale active man, of a spare and sanguine habit, and follows the occupation of game-keeper to a gentleman of rank. He has a tumour apparently the size of a small orange, situated under the lower jaw on the right side, *anterior* to the insertion of the *masseter* muscle, and in the region of the submaxillary gland. It is hard, nearly immoveable, and can be distinctly felt on introducing the finger into the mouth. It is attended with little pain, except on pressure.

He states, that he observed it for the first time about six months ago, when it could be moved backwards and forwards by the finger and thumb.

Six years ago my father removed a portion of the lower lip which was scirrhous.

On taking all the circumstances of the case into consideration, it was deemed advisable by Dr Thomson, Messrs George and Joseph Bell, and myself, to remove the tumour.

31st October 1826, 12. M.—In presence of Messrs Bell, Ure and several of our pupils, I performed the operation. The patient being seated on a chair, resting his head on the breast of an assistant, an incision was made through the skin and platysma myoides, parallel to the lower jaw, along the whole length of the tumour; another incision was then made downwards, at right angles to the former, about an inch and a half long, so that the two together presented the appearance of the letter T. Having dissected back the flaps, the facial artery was exposed and held aside; a few strokes of the knife brought the submaxillary gland into view, but the fascia which proceeds from its bulging edge was so much thickened, that the tumour could not be distinctly felt. A little farther dissection exposed the posterior belly and tendon of the digastric muscle, and it was found necessary to divide a few of its fibres. Having done so, the *hypoglossal nerve* could be distinctly seen lying at the bottom of the wound. I now found the small curved directory, generally employed in operations for aneurism, of singular utility, as it enabled me to divide *seriatim* the different layers of condensed fascia which proceeded from the *digastric muscle*, to the lower surface of the *submaxillary gland*. From the massing of parts, however, it was found impossible to avoid wounding the gland. A portion of the inferior edge of that organ, therefore, was cut through, before I came in sight of the tumour which lay sacculated deep behind the jaw. On reaching the sac, a small opening was made into it, and it was slit open from above downwards: the tumour was then turned out by means of the handle of the knife.

No vessel required a ligature during the operation, and the patient did not lose above two ounces of blood. The wound, which was about two inches in depth, was dressed with agaric, as it was deemed expedient to prevent its healing by the first intention.

The tumour, which was encysted, was about the size of a walnut, and on cutting into it, a quantity of curdy purulent matter escaped; its parietes were about a line in thickness, and of a cartilaginous hardness.

12 P. M.—Face much flushed. Pulse full and hard. Has had frequent rigors and subsultus tendinum since the operation. Deglutition difficult. Salivary secretion very copious. Dressings removed, and a bread and water poultice applied to the wound. *Mittatur sanguis* ad ℥xx.

2d November.—Has suffered a good deal since three this morning from general subsultus. Much pain in the course of the *descendens nonæ*, *accessory*, and *trifacial* nerves. Pulse quick, but soft. An inflammatory blush surrounds the wound.

℞ *Sumat statim Pulv. Mass. Pilul. Hydrarg. gr. x.*
et Pulv. Opii. grss.
℞ *Tincturæ valerianæ volatilis* ℥ss.
Sumat cochlearia parva duo quamprimum et cochl. tertia
quaque hora ex cyatho aquæ.
℞ *Guttarum de Battley, gtt. xx.*
Aquæ, Cassiæ ℥s. *ut fiat haustus hora somni sumendus.*

12 P. M.—In every respect much better.

From the 3d November up to the present date, (November 15), he has gone on rapidly improving in health, and has been frequently out of doors. The wound is quite filled up, and is now merely a slight superficial sore. Complains of no uneasiness whatever, and expresses an anxious desire to return home.

26. St. Andrew's Square,
15*th November* 1826.

Case of the High Operation of Lithotomy, in which unusual difficulty was experienced in the Extraction of the Stone. By George Ballingall, M. D. F. R. S. E., Surgeon Extraordinary to the King for Scotland, and Regius Professor of Military Surgery in the University of Edinburgh. (From the Edin. Med. Chir. Soc. Trans. vol. ii.)

David Meek, æt. 6, a delicate looking boy, was brought into the Infirmary on the 30th ult. ; and the following account of his complaints obtained from his parents, who accompanied him. He was reported to have had difficulty in passing his urine, ever since he was at the breast, and to have been in the habit of passing it in bed. His father stated, that the excretion of the urine was generally preceded by a complaint of pain, and that he has been occasionally observed to grasp the genitals, and to suffer excruciating pain after it. Was sounded, about twelve months ago, but no stone discovered.

The prepuce is contracted and somewhat elongated ; abdomen rather tumid ; appetite pretty good ; bowels regular ; prolapsus ani occasionally occurs.

Since his admission into the house, he has been repeatedly observed to pass his urine in a full and continued stream, apparently without pain, and has also passed it frequently unobserved during the night. The greatest quantity voided at any one time is about six ounces ; of a pale and rather cloudy appearance, but without any remarkable deposit. Was sounded the day after his admission ; and again on the 5th instant, in presence of all the surgeons of the house. Upon one occasion we felt the

sound grate against a stone, but the information conveyed by this instrument is obscure and unsatisfactory, no one having ever heard it strike the stone. At both examinations the boy passed his feces during the operation, and the rectum protruded to a considerable extent. Was sounded again on the 7th instant, and the existence of a stone distinctly established; chiefly by the finger of one hand in the rectum, and the other above the pubes. The stone was ascertained to be very large, and to lie unusually high up.

On examination from the rectum, while a sound or catheter is in the bladder, the parietes of this viscus appear thin and healthy. Has had occasional purgatives, and has been repeatedly in the warm bath since his admission. For some days past he has been taking a few grains of the soda pill; and, in consequence of some flatulent swelling of the abdomen, he took, last night, a cupful of infusion of senna with aniseed. The rectum was this day washed out by an injection, about an hour before the visit, and at noon the high operation was performed as follows.

A silver catheter was introduced into the bladder, and after drawing off the small quantity of urine which it contained; an attempt was made to distend the bladder by means of tepid water injected through the catheter. This, however, was very imperfectly accomplished, in consequence of the boy's violent struggles, and the forcible resistance made by the action of the abdominal muscles.

An incision about two and a half inches long was now made through the skin and linea alba, terminating at the symphysis pubis; the fibres of the pyramidal muscles were then separated in the mesial line, and partly detached from their origin in the pubes. The handle of the catheter being now depressed, its point was made to project about three-fourths of an inch above the symphysis, and a sharp pointed bistoury was then pushed into the bladder, immediately below the point of the catheter, and carried down towards the pubes, by which sufficient space was made for the admission of the finger. On its first introduction, nothing could be felt except the extremity of the catheter; but on turning the point of the finger upwards, the stone was felt impacted in the upper part, or fundus of the bladder, altogether above the brim of the pelvis, and wholly above the wound. Attempts were now made to seize the stone with the forceps, which repeatedly slipped, bringing away with them considerable fragments of the stone. It being obvious that nothing was to be gained by prolonging the incision downwards, it was now dilated upwards, on the point of the finger; and the attempts to bring away the stone by the forceps, scoop, and fingers in the rectum, were persevered in for some time without success. The stone, however, was brought nearer to the external orifice, and

retained in that situation by the finger *in ano.* No farther prolongation of the wound upwards (however desirable) could be attempted, the peritoneum having been already laid bare, and the intestine threatening to protrude. Under these circumstances, an attempt was made to gain a little space, by cutting transversely, and a few fibres of the bladder were divided in the direction on the right side, when the stone was extracted with a moderate degree of force. A quantity of tepid water was now thrown forcibly into the bladder, and the fragments washed out. The edges of the wound were besmeared with oil, with a view of preventing, as much as possible, the insinuation and lodgement of urine in the cellular membrane. Two stitches were passed through the upper end of the incision, supported by a strap of adhesive plaster; its lower extremity was left open, covered only by a slip of simple dressing, and a compress of soft lint. An elastic gum catheter was lodged in the bladder, and the patient conveyed to bed, having been in all upwards of half an hour on the table. The stone was of an irregular plum shape, weighing, exclusive of many large fragments, thirteen drachms and one scruple; measuring, in its longitudinal diameter, upwards of two inches, and in its transverse diameter one inch and a half.

The fragments of the external layer, which were put into Dr Turner's hands for analysis, contain some uric acid, but consist principally of mixed phosphate of lime, and ammoniaco-magnesian phosphate.

At 8 P. M. I visited this little patient, in company with Mr Allan. We found that he had slept some after the operation. Was lying upon his back, with his knees drawn up, to which position he always turned, although recommended to lie on his side. A considerable discharge of a fluid from the wound, tinged with blood, and some urine, flowing from the point of the catheter. Much tenderness over the whole abdomen, particularly in the immediate neighbourhood of the wound, where he could not bear the slightest pressure. Pulse about 120; tongue rather dry; respiration hurried. Eight leeches were ordered to be applied contiguous to the wound; to have a dose of castor-oil at day break, and some stewed prunes for food.

11*th.*—On visiting him at 8 o'clock this morning, I found that he had slept a good deal at intervals during the night. The leeches had bled freely; castor oil, which was given early this morning, had not operated; tenderness of the abdomen diminished; urine flowing both from the catheter and wound. At 12 o'clock matters appeared much worse; the boy's countenance was greatly altered, with a deadly paleness and lividity of lips; his pulse scarcely to be counted, and his respiration extremely hurried; was still acutely sensible to pressure on the region of

the abdomen; but when not roused nor irritated, seemed to be disposed to sleep. A mustard cataplasm was directed to be applied for a few minutes over the abdomen, and wine and water freely administered. Notwithstanding this, he continued to sink rapidly; became gradually insensible to surrounding objects, and to the presence of his mother, for whom he repeatedly called.

At 6 P. M. his pulse was imperceptible, his eyes turned upwards, and the pupils immoveable; his breathing became stertorous, and he expired about 8 o'clock, thirty-two hours after the operation.

12th February.—The body was opened in the theatre at the visiting hour; and, previous to the commencement of the dissection, the following admeasurements were taken: from the umbilicus to the beginning of the external incision 3 inches; length of the external wound, a little more than 2 inches; distance between the tuberosities of the ischia, $2\frac{1}{2}$ inches. A longitudinal incision was then made through the linea alba, from the ensiform cartilage to the umbilicus; from which point, two oblique incisions were carried downwards, on the right and left, diverging towards the crests of the ilia, passing through the substance of the abdominal muscles, and laying open the cavity of the abdomen. The peritoneum covering the trianglar flap, formed by these two last mentioned incisions, was dissected off from the inner surface of the muscles towards the wound; contiguous to this point, the peritoneum was found red, and suffused with blood, but perfectly entire in its texture. At one or two points in the left side, a little farther up, an increased vascularity was observed marking incipient peritonitis, and a little bloody serous fluid was effused into the abdominal cavity. The opening in the bladder was found to be nearly two inches long.

On removing the parts from the body, and prosecuting the examination farther, the upper part of the bladder embracing the stone, was found enveloped with strong and powerful muscular fibres, which converged towards a point a little below the superior extremity of the wound. At this point also, the cellular membrane lying over the muscular coat, and in the interstices of its fibres, was thickened and indurated, particularly on the right side of the bladder, and on its posterior surface, where the peritoneum appeared slightly puckered or corrugated. The appearances at this point marked, I think, an incipient organic contraction; and below this towards the cervix, the bladder was more flaccid and less fibrous, although altogether more muscular than a healthy bladder at this boy's period of life; its internal coat was highly vascular, and of a soft flocculent appearance.

Remarks.—This little patient was sounded three times previous to the operation; and although, from the history of the

case, and from the first examination, we were pretty well satisfied of the existence of a stone, yet no satisfactory information was procured as to its form, size, or situation. The information given by the sound was only conveyed through the medium of the fingers, the instrument not having been *heard* to strik against the stone. From the difficulty of bringing the sound in contact with it, my first impression was, that the stone was a very small-sized one, and, I believe, I mentioned this one day to the students at the patient's bed-side.

At the third examination, the situation and magnitude of the stone were first satisfactorily ascertained by my colleague Mr Allan, with the finger of one hand in the rectum, and the other hand above the pubes. In this way, the stone was distinctly felt by all present, lying above the brim of the pelvis; and in this position, I repeatedly felt it through the parietes of the abdomen, during the two days which intervened between this examination and the date of the operation.

The injection of the bladder, which was expected to facilitate the operation, was, as already stated, very imperfectly accomplished; indeed, I do not believe that an ounce of fluid was thrown up; and this process, I apprehend, will always be found extremely difficult, when the patient is so young as not to be made sensible of the importance of his own steadiness during the different steps of the operation, or not possessed of sufficient firmness to withstand the pain which the distension of the bladder has always been found to give.

The catheter employed for injecting the bladder, was in this instance retained as a guide for making the opening into it above the pubes, from an aversion to employ more instruments than were absolutely necessary; but should I have occasion to perform this operation again, I would be disposed to employ the sonde à darde; the stilette of this instrument being once pushed through the anterior part of the bladder, would effectually obviate any tendency of the instrument to slip or roll, as it were, either to one side or the other. The groove in the concave part of this instrument, or in the staff employed by Mr Hutchison, must also be useful in protecting the posterior part of the bladder from injury in making the opening into it with the sharp-pointed bistoury.

A stricture or contraction of the bladder below the stone was distinctly perceptible at the time of the operation; the scoop and blades of the forceps, which were pointed upwards, towards the umbilicus, evidently passed through a contracted opening into the more expanded cavity in which the stone lay.

On examining the parts carefully after death, it appeared that the incision might have been prolonged a little upwards before reaching the point of reflection of the peritoneum; but, from the depth of the wound, and the protrusion of the peritoneum into

it, this could not be ascertained, so as to enable me to avail myself of it during the operation. The extension of the incision transversely was very inconsiderable; and although it might have been carried farther in that direction with safety, it is not clear to me that it would have facilitated the dislodgement of the stone. Unless made above the site of the stricture, it could not have increased the dimensions of the aperture through which the stone had to pass; and the ultimate removal of the stone appeared to me to be expedited more by the exhaustion of the contractile power of the bladder, and the advantageous application of the scoop as a lever, than by any additional space gained by the transverse incision. Repeated attempts, I may observe, were made to break the stone by means of the forceps, after it was ascertained to be so disproportioned to the extent of the aperture; but although several large fragments were broken off from its lower or anterior extremity, its bulk was not materially diminished, and when ultimately brought out, its size, compared to that of the little patient, excited a simultaneous expression of surprise from the spectators, amounting to not less than five hundred in number.

Observations on the Ergot of Rye. By ——— Clark, Esq., Surgeon, Bristol. (Lond. Med. and Phys. Journal.)

On looking over the Continental Journals a few years since, my attention was frequently arrested by the effects described as resulting from the secale cornutum, and I anticipated the value which such a remedy would prove to our Pharmacopœia. Not having an opportunity myself of making a trial of its efficacy, I trusted to the accounts of those whose testimony, from their experience and advantages, I considered as satisfactory. The report, however, was very unfavourable, and I had nearly given up the idea of its proving any acquisition, till, through the medium of this Journal, such cases were brought before the publick as could not but attract considerable attention, and claim the patient investigation of every reader: I allude more particularly to the interesting details of Dr H. Davis. I feel pleasure in adding, that I am now enabled in some measure to corroborate his statements, by the result of the following cases:

Case I.—Mrs S——, a strong athletic woman, thirty-eight years of age (third labour), was delivered of a fine child, about eight o'clock A. M., half an hour before I reached her residence. The attendants were anxiously waiting the removal of the afterbirth. On examining the abdomen, it was found very hard and tumid, and by attention, I thought I could discover the situation of a second infant. No presentation, however, could be

ascertained by an examination per vaginam. The woman, though in good spirits, and free from fatigue, had no pains till noon, and those very slight; but, during their continuance, I was enabled to ascertain that the head of another child presented. No alteration occurred till four P. M.; the woman still very easy. The pelvis being very capacious, the external parts freely dilated by the passage of the first infant, and nothing but some slight pains wanting to complete the labour, I ordered a scruple of the secale cornutum in tea. Precisely twelve minutes after its exhibition, the woman was seized with a pain, which, though not very violent, continued from three to five minutes, and caused the child to descend into the pelvis, so that I could clearly ascertain the whole extent of the head and direction of the sutures. This was succeeded by others; and they continued, with some little intermission, for nearly two hours, when the second child was expelled; and in less than fifteen minutes, was followed by the placentæ. The mother and child did exceedingly well.

Case II.—Mrs C——, æt. thirty-eight (second child). Labour commenced about six o'clock Saturday morning, October 22. Had been ill three hours before I saw her. The membranes were ruptured, and the waters driven off with considerable violence. On making an examination, the os uteri was found but little dilated; the head presenting naturally, but high at the anterior and superior aperture of the pelvis. The pains continued strong, and at very short intervals, during the whole of the day, and increased towards night; still the labour proceeded slowly. About nine on Sunday morning, the os uteri was nearly effaced: the head made a perceptible descent. I consequently anticipated a speedy termination of the labour, but in this I was disappointed, by the cessation of any efficient pains: They were frequent and sharp, wearying, without propelling in the slightest degree. At noon I gave a scruple of the secale cornutum; and, in less than fifteen minutes, it was followed by a pain of greater force and bearing than any she had experienced during the labour: they remitted but little till the child was born, which happened about an hour and a half after its exhibition.

Case III.—Mrs Bullock, a short stout woman, had been in labour three days before I visited her, which was late on Tuesday night, the 8th. On making an examination, the external parts were soft, well lubricated with mucus, and disposed to yield; the os uteri dilated about an inch in diameter; the head lying high at the brim of the pelvis; the efforts of the uterus frequent and tiresome. Under these circumstances, I hoped, if efficient pains came on, the labour would terminate favourably. I directed the midwife to give an enema, and promised to call in the morning.

Wednesday, 10 A. M.—Things much the same; the os uteri, however, more dilated and loose; the woman very anxious. I now ordered a scruple of the powdered secale cornutum in tea, which produced, in ten minutes, a bearing down pain, that lasted, without intermission, for seven or eight minutes. The woman was standing, and, from the violence of the effort, I almost thought the child would have been expelled: others succeeded, but not so forcibly, for two hours. The pains now remitted, and I gave a second dose of the secale. The propelling efforts of the uterus again returned; the vectis was applied, and the child delivered, about an hour and a quarter after the exhibition of the last dose. The mother well, child dead.

It may be well to remark here, that this same woman informed me, that her last labour was exceedingly protracted and alarming: the child then also still born.

Though these cases are but few, they are the only ones in which I have given the ergot of rye a trial, and the result in each has been uniform. No unpleasant symptoms attended its exhibition, the pulse in none of the cases was in the least accelerated. Sickness attended once, but nausea had been complained of previously to its administration. The only alteration perceptible was the increase or rise of bearing efficient pains, within a few minutes after its being taken. From these circumstances, I think I may easily infer, with Dr Davis, that its action is peculiarly directed to the uterus; and that, under proper management, the dose being sufficient, and the quality of the medicine good, its effects will be found as well marked and decided as that of any other class of medicines with which we are acquainted.

Memoir on Multiple or Twin Births. By Professor DUGES.

Sect. 3. *Volume and Weight.*—TWINS are generally smaller than the infants which singly occupy the uterus. The average weight of biparous twins is about four pounds for each, the extremes three and five pounds, for the twins are often very unequal amongst themselves, but the sum is generally eight pounds. Triplets are seldom smaller than biparous twins. Delamotte says, he has seen them all three as large as ordinary children of single births. Triplets born successively in one case weighed as follows:

First born $5\frac{1}{2}$ pounds; second born, $4\frac{1}{4}$ pounds; third born, $3\frac{3}{4}$ pounds.

Quadriparous and quintiparous births are always premature, and do not admit of ascertaining the weight. They never arrive at maturity.

Sect. 4. *Disposition of the Membranes.*—Twins are sometimes contained in one single membranous envelope, and immersed in the same waters. This, however, is a case extremely rare, and Madam Lachapelle has never seen it. All twins and triplets that she has seen were each contained in its proper compartment, and separated by a partition or septum, composed of the addorsation of the two chorions and the two amnions. The *epichorion* is single, and entirely envelopes the two sacks. In some cases (Mancel, Inaug. Thes.) the chorion constitutes no part of the septum, and there is only one chorion for the two fetuses. These never met with that disposition, even when there was but a single placenta in common to the two infants. In the latter case, the two chorions, addorsed, seemed to be implanted into the placenta itself, whilst the amnion glided along the surface of each side of the septum, and became reflected over the placenta and the umbilical cords. The placenta is more often simple than multiplied; the proportion appearing to me almost as three to two. In fine, we meet with every degree of union, from simple contact to complete confusion. Sometimes there is anastomosis of the vessels of the one fetus with those of the other; at other times this is wanting. When it takes place, it is not by means of the capillary system; for, even in a single placenta, the capillaries of a cotyledon do not communicate with those of the neighbouring cotyledons (Wrisberg): this is demonstrated by several preparations lodged by M. Rogros and myself, in the cabinet of the Faculty of Medicine of Paris. Thus, the anastomosis is always effected by vessels sufficiently large of the number of those which are ramified upon the fetal surface of the *placenta.* (Lallemand, Thes. Inaugurale.) The five twins in Petretein's case, had two placentas, and two membranous sacks: the two *dead* infants occupied the one of these placentas, and the three living the other. These common placentas are always more voluminous than a simple placenta: their weight is ordinarily about $1\frac{1}{4}$ pounds.

Sect. 5. *Positions.*—By comparing the positions of each twin with the other, we have found that of 54 biparous deliveries, both infants presented the same parts 36 times, sometimes the head, sometimes the breech; 18, (or a third), presented different parts, one, for example, the head, and the other the breech or shoulder. In the latter case it was almost always the last born which presented this unfavourable position.

Probable causes of multiple conception.—Certain females seem eminently predisposed to twin gestation witness the person mentioned above, from Gottlob. I have known several females who have had, at two or three successive periods, twin births, without its being possible to refer that disposition to any peculiarity of constitution, habit, &c.

Some physiologists, observing that the mammiferous animals ordinarily bring forth as many little ones at a time as they have teats to nourish them, have thought, that the biparous delivery was most natural to woman; but observation has never shewn that twin births were more numerous among savages, approaching nearest to the state of pure nature; and, moreover, the exceptions to the rule are so numerous as quite to weaken it. The greater part of the solipeds and ruminants bring forth much fewer young than the number of their teats; the cow has four, the mare two, and yet they almost always bring forth but one calf, one foal.

Are two copulations, two corpora lutea, necessary in order to produce two embryos? Which of the new born twins should pass for the eldest? The first question may receive light from analogy, and some modern discoveries.

1*st*, Several mammalia have habitually multiple conceptions; the bitch upon which Spallanzani experimented brought forth three whelps, though he only injected the semen of the male once into the uterus. The females of birds lay a great number of fecund eggs, after a single coitus. The latter circumstance gives reason to think that there must be as many corpora lutea as embryons produced, and the researches of De Graaf upon rabbits establish the fact; 2*d*, If a single coitus did not suffice to produce a double impregnation, with vivification of the two *corpora lutea*, the observations of De Graaf, and those of Cruickshank, Messieurs Prevost and Dumas, proving that the ovum does not descend into the uterus by the Fallopian tube, till several days after impregnation, we may still conceive the possibility of a second, or even a third, coitus producing impregnation after a first. This is a fact easily proved. Buffon relates the case, so often repeated, of two impregnations produced in succession by a white person and a negro with the same woman, the result of each being a white child and a mulatto. D. Delmas has related, in the Bibliotheque Medicale (tom. xiv. p. 254), a case exactly similar which fell under his observation. In his case, there was only one placenta for the two twins, a strong proof that the two conceptions dated almost from the same epoch. The same is the case in the instance recorded by William Dewees in the "Annales de Litterature Medical Etrangere" (t. 8. p. 48). But the first days being past, and the ovum already descended into the Fallopian tube or uterus, can a fresh impregnation take place? In a word, can *superfetation*, properly so called, be considered as the source of twin conception? This is a question hitherto unanswered, but upon which all physiologists are not quite agreed.

All writers allow, that superfetation is possible when a double uterus exists, as in the cases described by Eisenmann, Gravel,

and in that which I described in my own inaugural dissertation. The case related by Tiedemann, after Noegeli, (Journ. Compl. June 1820), proves that pregnancy in such cases can only affect one of the two compartments of the double uterus; but it is conceived that a second pregnancy may take place in the empty cavity, at a more or less advanced period of the first gestation. Analogy confirms these views; animals with double uterus are very subject to genuine superfetation.

But there are also facts brought forward, which would seem to prove the possibility of real superfetation, even where a single uterus only exists. Theory it is said, is by no means repugnant to this notion: it may be maintained, with Grasmeyer, that the semen is absorbed in the vagina, and carried to the ovary by the circulating system. To this argument it is answered, that their fecundation might take place by any other region of the body equally well as by the vagina, which is far from being countenanced by experience. But relinquishing all theory, they appeal to experience, and quote the facts adduced by Buffon, &c. But we have already shewn, that these were examples of *double impregnation*, and not of true superfetation.

Which is the elder of two twins? The solution of this problem has varied with the theories upon which it was founded. Thus, the writers who believe that conception takes place within the uterus, ought to think that the embryo last deposited there is nearest the exterior, and must consequently be first born, so that the first conceived, and consequently the eldest, becomes, according to them, the last born. The contrary is the conclusion with those who regard the ovary as the seat of conception. We have remarked, that, in general, the strongest, largest child, and consequently the most stupid, (*le plus lourd!*) was always the first born; and we perceive, in this peculiarity, nothing more than a mechanical effect, which does not afford us the least reason for presuming that the one was conceived before the other *.—*Rem. Med. Mars.* 1826.

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* Plutarch, so deep a student of the ancient mysteries, asserts, that five being the highest observed number of twins, was the reason why the number of the hymeneal torches, lighted before the married pair, was limited to five. Ufenback informs us, that a mere pun is the origin of the famous delivery of the Countess of Holland, who, in consequence of the imprecations of a poor woman whom her aristocratic haughtiness had insulted, is strenuously asserted to have brought forth a *child for every day of the year*, usually interpreted 365! But it seems she was delivered at midnight, on the 29th of December, when the year (epochal) had only two days to run; hence a birth of twins was sufficient to fulfil the conditions both of the miracle and the curse. However, as J. A. Plener, in his "*Acerra Philologica*," asserts that this Margaret Countess of Holland was delivered of her brood, "in einer stunde auf den *Pfingstage*,"—on Whitsunday; the equivocation respecting these abortive twins, christened Margaret and John, it seems, must refer to the date of the imprecation, not to that of delivery.—Ed.

PHYSIOLOGY.

Experiments to determine the action of Titanium and Osmium upon the Human Body. By Ch. Gmelin.

Experiments with Titanium.—A DRAM of titanic acid mixed with some meat was given to a dog of the middle size. It manifested no action. No experiment was made with the tantalic acid; it is very probable that that substance is without action.

Experiments with Osmium.—Nine drams of a fluid which held osmium in solution was injected into the stomach of a small dog. Two minutes after, vomiting took place, and was renewed almost incessantly for more than an hour. At first the animal rejected a fluid having a strong odour of osmium; afterwards he could only reject with great efforts a small quantity of white froth; at the same time he was affected with cough; next morning he refused to eat, appeared considerably emaciated; but recovered by degrees.

Second Experiment.—Nine drams and a half of solution of osmium was injected into the stomach of a rabbit; the animal walked up and down, but would not eat, and became extremely emaciated. Four days afterwards it was made the subject of the following experiment.

Experiment Third.—At nine o'clock in the morning, nine drams and a half of the solution was injected into the stomach, and the same quantity afterwards. Immediately after the second injection, the animal appeared very weak, and the posterior extremities seemed paralysed; yet it gradually recovered, and the power of the extremities was restored.

At seven in the evening he was still alive. The following morning it was found dead and cold.

Upon examination the animal was observed to be extremely emaciated.

The esophagus, stomach and small intestines had even upon their surface of a bluish-black colour; the internal surface was black as charcoal, and hard to the touch.

The small intestines presented no change. The walls of the stomach in the vicinity of the cardiac orifice were somewhat edematous. The stomach and small intestines were empty. The heart, lungs, liver, spleen, bladder, kidneys, nerves, were in the natural state. It is highly probable that the first injection of the liquid was partly the cause of the existing alteration.

The black colour evidently resulted from the reduction of the oxid of osmium by the animal matter. No trace of inflammation was perceptible upon the parts blackened; they had not the least bad smell, and could not be torn with more ease than in the natural state.

Observations on the Saliva during the action of Mercury upon the System. By JOHN BOSTOCK, M. D. F. R. S. &c. One of the Vice-Presidents of the Society. (From the Medico-Chirurgical Transactions, vol. xiii. part i. p. 73.)

IN some experiments which I performed many years ago, on the chemical constitution of the saliva, I announced the existence of two animal substances in this fluid; one of them nearly, if not altogether, similar to albumen in its coagulated state, and the other resembling the uncoagulable matter of the serosity of the blood. The first of these substances is characterized by being united to a considerable quantity of water, yet insoluble in this fluid; not coagulated by heat, nor precipitated by the various chemical re-agents, which act upon liquid albumen, but affected by nitric acid and by potash, in the same manner with albumen when coagulated. The other animal ingredient in saliva is characterized by its not being acted upon by the various substances which coagulate or precipitate albumen, while it is precipitated by sub-acetate of lead, and by certain salts of tin and of silver *. This view of the nature of saliva I consider as being confirmed by many of my subsequent experiments on its more important parts, and what is of still more consequence, it is sanctioned by the high authority of Berzelius, whose analysis may be considered as essentially coinciding with mine †.

An opportunity having occurred of examining the state of the saliva, while the system was under the influence of a violent mercurial action, it appeared desirable to ascertain how far the secretion was altered in its chemical properties. The quantity of fluid discharged, was supposed to be about two quarts in the day, and all the other effects of the medicine, both local and constitutional, were proportionably severe.

The saliva was of a light brown colour, and had a faint odour; although slightly opake, it was nearly homogeneous: by standing for twenty-four hours some small films and minute flakes subsided from it, by which its opacity was diminished; in this state it was made the subject of experiment. It was considerably adhesive, but only in a slight degree tenacious; it was easily transferred from one vessel to another in the form of drops, and, when added to water, immediately diffused itself through the fluid, and was completely incorporated with, and

* Edinburgh Medical Journal, vol. ii. p. 43. 1806; also Medico-Chirurgical Transactions, vol. iv. p. 76.

† Medico-Chirurgical Transactions, vol. iii. p. 246. et seq.

apparently dissolved by it. It did not indicate either acid or alkaline properties by the appropriate tests. By slow evaporation, until the residuum had acquired a degree of brittleness, and a brownish yellow colour, the quantity of solid contents appeared to be above one-fiftieth of the weight of the whole fluid.

By being exposed for some time to the heat of boiling water, a degree of coagulation was produced; the fluid became considerably more opaque and thicker in its consistence, but there was no precipitate or separation of any of the solid matter. It was submitted to the following tests: solution of corrosive muriate of mercury produced a considerable precipitate, and, when the mixture was subjected to the heat of boiling water, a number of dense flakes separated from it, leaving the fluid transparent; after being passed through a filter, it had the aspect of pure water. By the addition of muriatic acid, the opacity of the saliva was considerably increased, and by applying heat, a coagulum was formed which gradually subsided; but it was less firm, and the separation was less complete, than when corrosive muriate of mercury had been employed.

From these experiments we learn, that the chemical constitution of the saliva was considerably different from its natural state; that this difference consisted in its containing a quantity of animal matter, possessing properties similar to those of albumen in its uncoagulated state, or as it exists in the serum of the blood.

Having ascertained this change in the nature of the animal matter in this saliva, which, it may be presumed, was owing to the action of mercury upon the system, it became an interesting object of inquiry to ascertain, whether any mercury could be detected in it. The method which I employed for this purpose was, to treat the evaporated residuum with nitric acid, by which means any mercury, if present, would be converted into the nitrate, and to test the fluid by the proto-muriate of tin. A preliminary experiment was made, in order to learn how small a proportion of mercury might be detected by this process. A given quantity of mercury was converted into the nitrate. I took as much of this nitrate as contained one grain of mercury; this was successively diffused through different proportions of water, until it at length composed no more than $\frac{1}{10000}$th of the mixture, when I found that the proto-muriate of tin produced a grey cloud, which was very distinctly visible. The same process was adopted with respect to the evaporated residuum of the saliva, but it did not afford the least indication of the presence of mercury; the experiment was repeated more than once without effect, and I may remark, that I obtained the same results in some experiments of a similar kind, which were performed several years ago.

After an interval of sixteen days, I procured from the same

individual a second portion of saliva. The use of mercury had, in the mean time, been omitted; and although the quantity of fluid discharged was still considerable, it was much less than before. The sensible qualities of the fluid were now entirely changed; it was considerably opaque, and had a number of mucilaginous flakes floating in it, which were insoluble in water, and not easily miscible with it; it was so viscid as to be capable of being drawn into threads, while, on the contrary, it did not admit of being dropped. Its solid contents, as ascertained by careful evaporation, were found to be considerably more in quantity than in the former case; it slightly reddened litmus paper, indicating the presence of an uncombined acid.

When this saliva was submitted to the temperature of boiling water, it was rendered more opake, but no proper coagulation took place; after standing for forty-eight hours, there was a separation of a more dense substance from the remainder of the fluid, but in imperfect degree only. The corrosive muriate of mercury and muriatic acid, were respectively added to portions of the saliva; in each case the fluid was rendered more opaque, but no distinct coagulation was produced; and although the effect was increased by applying heat, still the separation was not complete. By the addition of the sub-acetate of lead, a very copious precipitate was thrown down, consisting partly of large flakes, while the fluid was left quite transparent; and, as it appeared, deprived of all the animal impregnation. This saliva was examined as the former had been, for the purpose of discovering whether it contained any mercury; and it is scarcely necessary to state, that the search was unsuccessful *.

The conclusions which we may draw from the above experiments, on the nature of the saliva discharged, while the system is affected by the action of mercury, are sufficiently remarkable to arrest our attention. We learn from them, in the first place, that no portion of the mercury is actually present in the fluid; from which it follows, that the effect of this medicine, although so remarkably manifested upon the salivary glands, must be produced through the medium of the system generally, and hence we may presume, that all the organs destined for the secretion

* The improved state of medicine, with respect to the administration of mercury, seldom affords us an opportunity of observing so violent an operation of the medicine as took place in the above case; but I found the same kind of change, although in a less degree, in the saliva of persons under the moderate influence of this medicine. In a specimen which I procured from the wards of Guy's Hospital, the saliva had nearly lost its tenacity, was readily soluble in water, and after being passed through a filter, was precipitated by corrosive muriate of mercury, and was rendered partially opaque by heat. In another specimen, the same effects were observable, but here the fluid retained a degree of tenacity, and was only in part capable of being passed through a filter; while a third specimen appeared to be little changed from its healthy state, except in its containing a greater proportion of water. I shall not omit any opportunity which occurs, of examining the saliva in the state of more severe mercurial action.

of mucus, will undergo the same change. This change would appear to consist essentially in the conversion of the animal matter, from the state of a mucous to that of a serous, or rather of an albuminous fluid.

Now, although we are not sufficiently acquainted with the theory of secretion, to know what are the minute operations which enable the capillary vessels connected with the glands, to produce their appropriate fluids, yet we may form some idea of the relation which they bear to each other, as far, at least, as regards the greater or less complexity of the process. All those fluids, for example, which proceed from what are termed serous membranes, appear to differ from the serum of the blood, solely in the proportion of albumen which they contain, and we may therefore conceive that they are generated by a process resembling transudation, and that this is, in a great measure, of a mechanical nature. In the secretions, however, which are discharged from the mucous surfaces, we find a change effected, which is of a chemical nature, where a new substance is generated, which did not previously exist in the blood. In what way the vital functions act, so as to convert albumen into the mucilaginous matter which forms the basis of saliva, is at present beyond our power to ascertain; but whatever it be, we find that, in the case before us, the operation of mercury upon those parts is to counteract the ordinary secreting process, and to reduce the action of the glands to that of mere transudation.

Were we disposed to speculate upon this subject, we might inquire, whether an increase in the diameter of the vessels, in consequence of an increased afflux of fluids to them, or whether the more rapid transmission of their contents, without an increase in the capacity of the vessels, would be adequate to explain the effect. But I think the present state of our knowledge on the subject is much too imperfect, to enable us to arrive at any degree of certainty upon these topics. Nor is it in our power to make any considerable advance in the application of the facts to pathology; but still we may be allowed to state some probable deductions from them, which may perhaps lead to new facts, and these in their turn to more important conclusions.

As we find that at least one operation of mercury is to convert a mucous into a serous secretion, the following queries naturally suggest themselves: Whether we may not conceive that the action of this remedy, in the cure of glandular obstructions, consists simply in producing this change in the nature of the secretion? Whether, even in the removal of the diseases of surfaces, mercury may not operate on the same principle, by counteracting the effect of specific secretions, and reducing them to the mere transudation of a serous fluid? Whether, by examin-

ing the effects of the remedy upon the chemical nature of the mucous secretions, we may not be furnished with a more accurate test of its constitutional action, or at least of the extent of this action, than we at present possess in the mere quantity of saliva that is discharged?

Before I conclude this paper, I may remark that I had an opportunity, some time ago, of examining the fluid discharged from the internal surface of the stomach in two cases, where this organ exhibited the appearance of acute inflammation. In one there was reason to suppose that death had been occasioned by arsenic, although none could be detected; in the other the patient died in a few hours, after swallowing a large quantity of ardent spirits. In both these instances the secretion from the mucous membrane of the stomach appeared to be much more albuminous, or serous, than in its natural state.

It is well known that there are certain morbid conditions of the urine, in which it is found to contain a portion of albumen, cognisable by the usual tests, and it is generally understood to be an indication of an inflammatory action of the sanguiferous system. I would not venture to generalize, so far as to conclude that the action of mercury on the salivary glands, the inflammation of the mucous membrane of the stomach, and the peculiar condition of the system producing albuminous urine, are all to be referred to the same specific, but the coincidence is noticed as one that may deserve further investigation.

As an appendix to the above paper, I shall beg leave to lay before the Society an examination which I lately made of the mucus expectorated by a patient suffering under a severe catarrhal affection. I am aware, that a part at least of this fluid proceeded from the glands of the lungs; whereas the saliva, in the former case, may be supposed to have been principally discharged from the salivary glands; but I am of opinion that all the mucous secretions resemble each other in their more essential properties, so as to admit of a comparison being made between them in their various morbid states. In the following case it will appear that the saliva had experienced no very important change in its chemical constitution, but that the quantity of the substance which may be considered as its specific ingredient (and which I regard as nearly resembling coagulated albumen), was much increased in quantity, while there was no tendency to that alteration in its nature, which appears to be produced by mercurial action. A patient who was suffering under a severe catarrhal cough, but not attended with inflammation, expectorated a large quantity of unusually thick mucus, probably not less than a pint in twenty-four hours. A portion of this fluid was obtained for examination. It was extremely tenacious, so

as to be capable of being drawn into very long threads; and in attempting to pour it from one vessel to another, the whole of it passed over at once. It was semi-opake, and the greater part of it of a uniform consistence; but there were certain portions which were more opake than the rest, and remained suspended in the other part of the fluid. There was a great quantity of air-bubbles attached to its upper surface, and the froth remained for several days without any apparent diminution.

The most delicate tests did not indicate the slightest tendency either to acid or alkali, and it continued exposed to the air for three weeks, without experiencing any change. Although its consistence appeared to be at least as dense as the white of an egg, it was found to contain a much smaller quantity of solid contents. When carefully evaporated by a gentle heat, until it was just beginning to be charred, but while it was still capable of being mixed with water, and of regaining its former consistence, a residuum of about $\frac{1}{50}$th was obtained. This had the appearance of a hard, brittle, semitransparent substance, and did not appear to undergo any change by exposure to the air. When the heat was continued, the residuum was converted into a brown mass, emitting a specific odour, and slightly attracting moisture from the atmosphere. A red heat converted it into a hard spongy charcoal, which was difficult to incinerate. When exposed to a bright red heat it was consumed, leaving a white substance which appeared to undergo a partial fusion, attended with decrepitation. A white powder remained, which was found to be chiefly muriate of soda.

A portion of the mucus had four parts of water added to it, and was suffered to remain at rest. After an interval of three days, the mucus continued floating in the water apparently without having mixed itself with it. The whole was then thrown upon a paper filter. A quantity of fluid, that was perfectly transparent, and only slightly viscid, (A) passed through, while the mucus remained on the filter apparently little changed. Another similar mixture was strongly agitated; the greatest part of the mucus appeared to be thereby uniformly diffused through the water, but there were masses of films, or threads suspended in it, which seemed incapable of being incorporated with the water. The whole fluid was very viscid and tenacious, and the mucus shewed no tendency to separate or subside from the water.

A portion of the mucus was exposed for some time to the boiling temperature: there was little immediate effect produced; but after some time the opake masses became more dense and gradually subsided, while the fluid generally was rendered rather more opake. In twenty-four hours, a small quantity of a white precipitate subsided from it, and it was now considerably less

tenacious, so as to be capable of being transferred in divided portions from one vessel to another, but it was still very viscid, and frothed much upon agitation (B). The solution of the corrosive muriate of mercury had no effect upon it, at the temperature of the atmosphere; by heat it was rendered rather more opake, but no precipitate or coagulum was formed.

Two equal portions of the mucus had the solution of the corrosive muriate of mercury, and the muriate of tin respectively added to them; no immediate effect was produced, nor was there any very considerable change in twenty-four hours. They were then exposed for some time to the temperature of boiling water, when, as in the former cases, the opake parts were rendered more dense, and slowly subsided; while after a second interval of twenty-four hours, the whole of the two fluids became considerably less tenacious, and large flocculent masses were formed, which slowly subsided: this was more especially the case with the fluid to which the corrosive muriate of mercury had been added.

When nitric acid was added to the mucus, without the action of heat, a white precipitate was gradually thrown down in small quantity; and when heat was applied, the precipitate was increased and rendered more dense. The fluid acquired a light yellow colour, and a very decided waxy, or rather adipocerous odour. When the acid was supersaturated with ammonia, the colour was converted to a deep yellow, but no precipitate was thrown down. The precipitate mentioned above, being separated by a filter, was of a straw colour, somewhat fusible, and inflammable, and appeared to be of a waxy or adipocerous nature. A portion of the mucus was evaporated to dryness, and was then heated with nitric acid. This dissolved it, with the disengagement of gas, while the fluid acquired the straw colour and adipocerous odour. By the addition of ammonia its colour was much deepened, and a white precipitate was thrown down.

To a portion of the filtered fluid (A), acetate of lead was added, and immediately a copious white precipitate was deposited, which, after remaining at rest for twenty-four hours, separated into two portions, the lower having the appearance of small dense white particles, the upper more bulky, less white, and flocculent. Another portion of the fluid (A) was slowly evaporated, and it left a residuum, which was obviously composed, partly of a film of animal matter, and partly of a saline substance, in the form of irregular and indistinct crystals.

To a portion of the entire mucus, after having been agitated with four parts of water, the acetate of lead was added. A very copious precipitate was thrown down, which, as in the former case, consisted distinctly of two portions, a more dense one below, and a more flocculent one above; the fluid was left

completely limpid and transparent. The muriate of tin, and the nitrate of silver, had both of them the effect of gradually throwing down precipitates from the mucus, which, in the latter case, were of a dark brown colour, while the fluid was rendered transparent, and much less tenacious.

Upper Bedford Place,
April 24. 1824.

Review of Observations on the Physiological Principles of Sympathy, chiefly in reference to the peculiar Doctrines of Mr Charles Bell. By W. P. Alison, M. D. F. R. S. E., Secretary to the Society, and Joint-Professor of the Theory of Medicine in the University of Edinburgh.—(Transactions of the Medico-Chirurgical Society of Edinburgh, Vol. II.)

[Judging from internal evidence, we consider the paper announced as a reply from Mr Charles Bell himself to the objections offered against his theory, by Dr Alison, in a paper, of which we have already presented an account, and copious abstracts, to our readers. The present is at all events an able apology,—and we copy it entire from the last number of the Medico-Chirurgical Review, without other note or comment than a passing reproof of the concluding paragraph. Like most other personal allusions, it becomes at best a double edged weapon; for every one knows, that, though Dr Alison's position as a professor, has added weight to his opinions, yet the reputation and influence of a metropolitan lectureship of anatomy, must also have weighed favourably in support of the doctrines of Mr Charles Bell. There is no end to the petty advantages that might be enumerated, as contributing to the impression made, by the writings of each: but the public will ultimately neglect them on both sides, and decide their controversy on very different principles. Papers of the present description, though bearing the name of "Reviews," are mere disquisitions upon general doctrines, and are therefore often inserted by us under the monographic department for papers; nor did we ever dream of apologizing for their divorcement from the "analytical" examinations of works which we publish under the former appellation, till we saw the practice carped at in the rabid ululations of a London Journalist.—Edit.]

THE question of the sympathy of the nerves has been so involved in obscurity from the want of *data* for discussion, that it has been almost abandoned by modern physiologists. Indeed it is obvious, that, until we have attained a knowledge of the functions of the nerves, on which sympathy depends, little progress can be made in the investigation. During the times

of Whytt, Haller and Monro, this subject engaged the attention of a numerous class of writers, and was the source of many an ingenious and many an incomprehensible theory. In reviewing these theories, we observe that, although there was much abstruse and subtle reasoning employed in their support; yet the anatomy of the nervous system, as it was then taught, could never be brought to lend them much assistance. By some, the theories were retained, although the facts of anatomy were altogether neglected; and if there were others who sought to strengthen their views by reference to anatomy, they were accused of perverting it to suit their purposes. "Solent qui ita sentiunt, varias nervorum connexiones, maximè tum paris vagi, tum intercostalis nervi, quod latissimè pateant studiose inquirere et amibitiose exaggerare, est tam multis et tam variis symphathiis explicandis possint accommodari: sed operam manifeste ludunt et suo abutuntur otio."—*Astruc.*

When we mention the names of Dr Whytt, Dr Monro, and Haller, as having been engaged on this subject, it is sufficient to show that the "Principle of Sympathy" was not neglected. Yet these celebrated men have left it exceedingly vague and uncertain, principally because the consistency of their doctrines with the anatomy of the nervous system could not be proved: for no "Physiological Principle of Sympathy" can be satisfactory, unless it admits of an explanation on the grounds of the anatomy of the nerves. When we reflect on the imperfect knowledge which these authors possessed, concerning the functions of the nerves, we cannot wonder at their having relinquished all hopes of reconciling their views with the facts of anatomy. Since their time, however, great improvements have been made in the knowledge of the system of the nerves: this division of anatomy has been converted from a state of intricacy and uncertainty into an open and fair field for legitimate inquiry.

And this leads us to remark how natural it was that Dr Alison, while studying the "Physiological Principle of Sympathy," should refer to the recent discoveries of the functions of the nerves by Mr Charles Bell; but we are astonished that he seems to have derived so little advantage from them. Mr Bell's system of the nerves perfectly coincides with the opinions concerning sympathy which Dr Alison supports in the above paper, as we shall presently be able to show; yet, instead of perceiving this, he has perversely thrown aside anatomy, and, together with it, the only confirmation of his views. "The researches of Dr Whytt and Dr Monro on this subject were, as I think, quite successful in establishing two points in regard to such phenomena; first, that they cannot be explained by the connections of the nerves of the sympathising parts; and,

secondly, that they do not indicate any necessary consent or sympathy between the individual parts of the body; but, in general, are simply the effects of certain mental sensations." P. 170.

It may be seen from this quotation, that Dr Alison does not seek for an anatomical explanation of the physiological principle of sympathy: indeed he is so strongly convinced that sympathetic actions cannot be explained by the connexions of the nerves, that he has made this the ground of an attempt to invalidate Mr Bell's classification of the nerves.

In the investigation of this subject, the author of this paper has adopted metaphysical reasoning, in opposition to that which is grounded on anatomy: and he prefaces his observations by stating this opinion. "It is absolutely incumbent on every one who studies the physiology of the nervous system in the human body, to consider carefully the laws of the mental phenomena as made known to us by our own consciousness, and as generalized by the writings of metaphysicians." There is no one who can deny the justness of this sentiment; yet we think that, in studying the physiological question which he has chosen, there ought to be combined, likewise, proofs from anatomy, in order that sober and correct views might be attained.

The object of the first part of Dr Alison's paper is to correct the idea of sympathy, implying a *necessary consent of the individual parts of the body with each other.* "If we take a systematic view of the different effects of mental acts on the bodily organs—not only of those which result from strictly voluntary acts, but of those also which result from instinctive efforts, and from sensations and emotions of the mind, we shall give, under these different heads, (but especially under that of the effects of sensations on the body,) what I believe to be a true account of most of the phenomena generally considered as indicating such necessary consent."—P. 173.

It is his opinion, that sympathetic actions do not depend on any uniform consent of individual parts with one another, necessarily resulting from connections among the nerves, but simply on the excitation of particular sensations; and he proceeds to illustrate his views by arranging the different kinds of sympathetic actions under the following heads:—1. The muscular actions, from irritation of distant parts, which are called sympathetic, appear to co-exist in the body only with the indications of sensation. 2. The attention of the mind cannot be fixed at one and the same time on two distinct objects: this is a proof that a mental sensation must necessarily intervene between the irritation of one part of the body, and the excitation of such movements as we have considered, in another. 3. In several instances of sympathetic actions, the sensations which are

regarded as their cause, may be excited by irritation of different parts of the body; proving that what is needful to the excitation of actions of this kind is not the irritation of particular parts, but the excitation of particular sensations. 4. Different irritations of the same parts do not excite the same actions, if they excite different sensations.

Each of these statements is illustrated by numerous instances of peculiar sympathetic actions; and, after they have been duly discussed, the author proceeds to criticize Mr Bell's classification of the nerves. " Mr Bell appears, indeed, to consider his respiratory nerves as acting always under mental feelings, and so far his opinions agree with those of Dr Whytt. But I think he has not observed, that several of the statements by which Drs Whytt and Monro established the dependence of sympathetic actions on sensation, and their independence of connexions of nerves in their *course*, are equally conclusive against that dependence of certain sympathetic actions on the connexions of nerves *at their roots*; for which he himself contends."—P. 191. In these sentiments we find an explanation of the reason why he refuses to adopt Mr Bell's views: he has perceived that the class of respiratory nerves is made to account for several sympathetic actions; and being a disciple of Drs Whytt and Monro, and convinced by them that the principle of sympathetic actions cannot be explained by the connections of nerves, he has concluded that Mr Bell's views are incompatible with their doctrine, and, therefore, that his explanation of the functions of the nerves must be unfounded. We shall presently shew that their views on the genecal principle are so far from being inconsistent with each other, that, if Dr Alison had attended more carefully to Mr Bell's classification of the nerves, he might have found that the facts of anatomy agree perfectly with the doctrine of Dr Whytt. We must proceed, however, to notice the misconceptions on the part of Dr Alison, which have been the cause of his opposition. We find that he details at great length, his objections to the classification of every individual nerve called respiratory. But it is to be remarked, that he attends almost entirely to the connections which these nerves have at their roots, as noticed by Mr Bell, and has neglected the great and important peculiarities to be observed in their distribution through the body. He says, in the end, at p. 222, that he has adduced sufficient statements to entitle him to affirm " that no bond of connection has been ascertained at the roots of the nerves which Mr Bell has designated as respiratory, which does not extend to other nerves not included, or not possessing any claim to be included in that system." He leads us to conceive that Mr Bell founds his opinions of the functions of the nerves on the circum-

stance of their arising in a particular manner from certain columns of the spinal marrow and brain. Mr Bell, on the contrary, was led to make his discoveries by attending to the parts of the body to which the nerves went: he observed that the class of nerves called respiratory took their course to those parts of the body which are, in function, connected with the organ of respiration: and that they were distributed there, in addition to another class of nerves, the properties of which he had discovered. He directed his attention to the phenomena exhibited in the apparatus for breathing: he ascertained that the endowments of the parts which constitute this organ are complicated in the same proportion as their nerves are numerous: he found that the excessive intricacy in the nerves of the face, jaws, throat, and breast, was on account of the individual nerves being agents of distinct powers—for combining the muscles in subserviency to different functions; and it was by carefully attending to each nerve, and viewing the actions of the muscles to which it is distributed, that he discovered its use, and was enabled to class it separately from the others. His views of the properties of the different *columns* were obviously deduced from knowing the functions of all the nerves which arise from them.

Let us here take an example, to prove that anatomy points out to us a difference between the nerves bestowing muscular power. For this purpose, let us select the portio dura of the seventh pair, to determine what is its function. The fifth pair of nerves supplies the same part as the portio dura: the question, therefore, arises, what are the distinct offices of each? We know that the former is a compound nerve, resembling the spinal nerves arising by two roots: the nerves proceeding from one root bestow sensibility to the head, while the other bestows power to the muscles of the jaw. The anatomical character of the fifth pair is, that it is distributed to almost every part of the head. It can even be traced most distinctly sending its branches to the muscles of the face. We have said that the fifth pair is a muscular nerve; yet those branches which it sends into the muscles of the face, are not the motor nerves of the face: they possess no direct power of exciting these muscles to contraction. It would appear, from this alone, that the muscles of the face are of a class which require their functions to be bestowed by a nerve different from a common one. This leads us to observe what are the distinctions between the muscles of the jaws and those of the face, to ascertain whether their functions be different. The muscles of the face are subject to changes depending on the quiet or excited condition of the apparatus of respiration. Involuntary actions in the muscles of the eyelids, of the nostrils, and cheeks, are the consequences

of the respiratory organs being violently roused. These muscles are much affected in certain passions of the mind, when we observe the whole respiratory organ moved. There is another peculiarity regarding these muscles: in certain conditions they are placed beyond the influence of the will, as in continued breathing, yet they are also subject to the will, as we observe in speech; and we must not omit to notice that the involuntary action necessary for breathing proceed, at the same time that these muscles are employed, under the direction of the will, for other purposes. All these circumstances prove that the muscles of the face are endowed with properties which require a nerve different from a common nerve. Accordingly, we find that the portio dura, the respiratory nerve of the face, comes from a source in the brain different from that of the fifth pair; that, at its origin, it is close to other nerves, which may be proved to possess similar endowments with it; and that it takes a course different from the fifth pair, for the apparent purpose of combining its branches with the respiratory nerves. Are these not fair grounds for arranging this nerve (the portio dura) among a distinct class from the symmetrical nerves, and giving it a name corresponding to its character? Another conclusion to which Dr Alison arrives, exhibits to us the drift of his previous reasoning. "The nerves which Mr Bell includes in his system (viz. the respiratory) are easily excited *by irritation not acting on any of their own number.*"

We conceive that *irritations* are conveyed by nerves of sensation, and not by motor nerves. The principal cause of his objecting to the system of the respiratory nerves, is founded on his not having separated in his mind the nerves of sensation from the nerves which command muscular action. Thus, because tickling the nostril excites the action of the muscles connected with respiration, he wonders why the branch of the fifth pair, within the nostril, is not included among the respiratory nerves.—(P. 200.) The nerves of respiration are explained to be those which are distributed on a peculiar class of muscles, to control the actions connected with breathing. The nerve of the nose possesses an influence over the respiratory actions only in an indirect manner, by its connection with the sensorium. If we desire to know which nerves produce the phenomena, we must look to the muscles which are called into action: these indicate which nerves were excited, because we know the nerves that go to supply these muscles. We should never think of looking among the nerves of *sensation*, to discover those destined to effect or *motion*. Here, then, appears to be the principal error of Dr Alison: he has looked for respiratory nerves among nerves of sensation, when he might have known that the nerves of sensation form a distinct class in Mr Bell's sys-

tem; and he might have found that the fifth pair is included in that class. The peculiarity of the respiratory nerves consists in their being motor nerves, which supply the muscles employed in the actions of breathing, bestowing upon these muscles those peculiarities which distinguish them from all others, and combining them to act with one simultaneous effort.

It is necessary for us to remember that the respiratory nerves, in their course, are connected with nerves belonging to the other classes; so that the parts to which they go may appear to possess, through them, more endowments than one. If we find an organ, which is supplied by respiratory nerves, possessed with a peculiar sensibility, as the epiglottis, we are to ascribe the sensibility to the sensitive part of the spinal nerve, with which the respiratory nerve is bound up in one sheath; but the power of drawing the small muscles around the epiglottis into action belongs to the respiratory nerve.

It is rather an interesting circumstance, that, about the same time that Dr Alison's essay appeared, Mr Bell's paper on the nervous circle was published *, which contains opinions that coincide with those of Dr Alison, concerning the principle of sympathy. The views of Mr Bell have been deduced altogether from anatomy, while pursuing his investigations into the functions of the nerves of sensation and muscular motion. But we have seen that Dr Alison has totally rejected anatomy: and, on metaphysical grounds, has endeavoured to prove that the peculiar doctrines" of Mr Bell are incompatible with the " physiological principle of sympathy." We introduce the following quotation from the paper on the nervous circle to exhibit the author's views. It is his object to prove that, between the muscles and the brain, there is a circle of nerves: that one nerve gives the sense of the condition of the muscle to the brain: another conveys the influence from the brain to the muscle.

" For example; a patient of mine having, by a tumour pressing on the nerves of the orbit, lost the sensibility of the eye and eyelids, she retained the motion of the eyelids by the portio dura coming round externally, and escaping the pressure which injured the other nerves. Here the course of sensibility backwards to the brain was cut off, while the course of volition was free; she could not tell whether the eyelid was open or shut, but, being asked to shut the eye which was already closed, she acted with the orbicular muscle, and puckered the eyelids. When I touched the eye there was no winking, because the sensitive fifth pair had lost its power, although she could command the motion by voluntary exertion.

" In another instance, when the eye was insensible, touching the eye gave rise to a blush of redness and to inflammation, because the part was excited, but the muscles were not called into action: the relations

* In the Philosophical Transactions 1826.

vhich connect the sensibilities of the eye with the motions of the eye nd eyelid, are established in the roots of the fifth, and the seventh in he brain: the loss of function of the fifth nerve, therefore, interrupted he circle. Here, too, the motor nerve of the eyelid was perfect, and he eyelid readily acted under the influence of the will; but when the ye-lid was touched or pricked, it communicated no sensation. Is this nsensibility of a motor nerve owing to the course of its influence being rom the brain, and not towards it? When the nostril had lost its sen- ibility from an affection of the fifth pair, we could not excite sneezing: vhen the tongue and cheek had lost sensibility, the morsel was per- nitted to remain between the tongue and the cheek until it was of- ensive, although the motion both of the tongue and of the cheek were erfect. All these phenomena correspond with the experiments on ani- nals.

"Now it appears that the muscle has a nerve in addition to the motor nerve, which being necessary to its perfect function, equally de- serves the name of muscular. This nerve has no direct power over the nuscle, but circuitously through the brain, and by exciting sensation it nay become a cause of action.

"Between the brain and the muscles there is a circle of nerves: one nerve conveys the influence from the brain to the muscle; another gives he sense of the condition of the muscle to the brain. If the circle be roken by the division of the motor nerve, motion ceases: if it be roken by the division of the other nerve, there is no longer the sense of the condition of the muscle, and therefore no regulation of its ac- ivity.—P. 9.

Thus we observe that both gentlemen agree about the general principle—that a sensation conveyed to the mind, or the sen- sorium, precedes the action of a muscle: but there is an essen- tial difference in the mode by which they arrive at this conclusion: one rejects anatomy altogether, while the other grounds his reasoning wholly upon anatomy, and is confined solely to the proofs which he derives from that source. In the paper alluded to, Mr Bell has followed out this principle only so far as to shew the connection of the nerves of sensation with the muscles of voluntary action. Yet there is no reason as- signed for confining the connection to the voluntary muscles: on the contrary, the illustrations which we have quoted prove that the same principle applies equally to those which are in- voluntary. The nerve to which our attention is most frequent- y directed, is the portio dura, the motor nerve of the muscles of the face; and we know that this, at certain times, is under the control of the will, but most frequently is independent of it.

It is very remarkable, that, although Dr Alison has stated his conviction, that sympathetic actions depend upon sen- sation, yet he has omitted to consider the nature and pecu- liarities of different sensations. Having arrived at the con- clusion that there is a previous sensation of the mind, he

conceives that he has attained the whole physiological truth concerning the principles of sympathy; and he has, perhaps, advanced so far as metaphysical research allowed. But it is to be considered,—1*st*, That sensibilities are infinitely varied over the whole body: 2*dly*, That each kind of sensibility is attended with its appropriate sympathetic effects: and, 3*dly*, That the nerves which convey sensation to the sensorium form a distinct class.

1. The nerves of sensation are distributed, as we well know, over the whole body: their most striking peculiarity is, that the sensibilities of different parts which are conveyed to the sensorium are infinitely varied. It was long a subject of controversy among physiologists whether certain structures in the body possess sensibility or not. But during the course of their inquiries they forgot to settle this question—whether the parts of the body are indiscriminately endowed with one kind of sensibility, or whether they are possessed, each with a peculiar kind, which is best suited for its protection? Both parties in this discussion appear to have fixed upon the sensibility of the integuments, as their test of sensation; for, whether they experimented upon the heart, lungs, intestines, muscles or tendons, they tried upon all the effects of those substances which we know cause pain when applied to the skin: and they judged of the degree of sensibility in each in the signs of pain which the animals exhibited. There can be no just comparison, however, between the sensibilities of different parts: by a wise provision of Nature, each organ is endowed with that kind of sensibility which is best suited for its protection and its offices in the economy. Thus, the common integument is not endowed with a sensibility which resembles that of the surface of the eye; the heart does not possess the same sensibility as the skin, yet it is most acutely sensible to its proper stimulus, —viz. the distention by blood; ligaments, tendons, and cartilages, possess sensibility of a certain kind, yet not such as to cause pain during the natural motions of the body; but, if a joint be stretched beyond its proper degree, its sensibility is immediately excited, as any one must know who has ever sprained his ankle.

More examples might be adduced to prove that sensations are different in the various structures of the body. They are implanted for the purpose of guarding the individual parts; and it is in conformity with this principle that each structure is endowed with an appropriate defence against injury.

2. Sensations, likewise, vary throughout the organs of the body, to produce certain combinations of the muscles.

If we consider the system of the animal body, we shall see many instances of peculiar sensibilities rousing certain muscles

into activity. Irritation of the larynx, producing cough, is not a more curious example of a peculiar sensation stimulating an infinite number of large and small muscles, to combine for one purpose, than irritation produced by the pressure of the urine upon a particular spot of the bladder, in causing some muscles to relax, and others to contract, for the expulsion of the urine. In the muscles of the perineum in the male, we find another example, equally illustrative: for, when a different kind of sensation forms the excitement, a different combination of the muscles is produced. The arrangement in the action of the muscles for expelling the feces forms also another illustration. We might multiply our instances by referring to the intestines, or to the heart, which contract on their contents, each acknowledging the influence of its proper stimulus. No example is more wonderful than that of the sensibility of the uterus, which having remained inactive during gestation, at length contracts upon the fetus, when the proper period for its expulsion has arrived.

These examples shew that certain sensibilities are implanted in various parts of the body, which, being excited, cause the actions of appropriate muscles. Each of these sensibilities is bestowed for useful purposes in the economy, and it is necessary that we should have a perfect acquaintance with the functions of a part, to understand the character of its proper sensibility.

3. Let us now consider the class of nerves which bestow sensation.

The anatomical fact, in relation to the variety of the sensibilities in the body, is thus:—The nerves of sensation, which are those arising from the posterior column of the spinal marrow and the fifth pair, are endowed with sensibilities very differently modified. This may be best illustrated by considering the fifth pair. It is now ascertained that this nerve bestows, first, the degree of sensation which is peculiar to the skin; secondly, that acute sensibility which is possessed by the surface of the eye; *thirdly*, the sensation peculiar to the internal membrane of the nose; *fourthly*, that of the sides and tip of the tongue; and, *fifthly*, that of the muscles. Instances have occurred to prove that any of these sensibilities may be separately lost by affections of the fifth pair.

But, if we inquire further, we shall find that distinct sympathetic actions are dependent on each of these peculiar sensibilities, all of which are roused into activity by this individual nerve. 1. Dashing cold water on the skin of the face or head produces a deep inspiration. 2. The surface of the eye being irritated causes convulsive action of the orbicularis oculi, and draws tears from the lacrymal gland. 3. Tickling the inside

of the nose excites the whole apparatus of the respiratory muscles to violent action, to produce sneezing; and, in this case we may observe that the actions of a numerous class of muscles are arranged so as to direct and concentrate the expired air to sweep off the offending cause from the nostril. 4 Sapid bodies being applied to the tongue, cause an increased flow of saliva to the mouth, and draw into action the organs of mastication.

Cases have occurred * which prove that, when the fifth pair is destroyed, the sensibilities being lost, the muscles cease to produce their sympathetic actions; so that the eye may be pressed with the finger without causing winking, and the inside of the nose may be tickled without sneezing. Yet it is observed, that patients, in these circumstances, can shut the eyelids, or draw the other muscles of the face into action, by voluntary effort.

It will now, perhaps, be allowed, that we have made a considerable step towards connecting anatomy with the "principle of sympathy." We may not, indeed, be able to explain why a certain kind of sensibility produces a certain sympathetic action, for that must depend upon the sensorium; but we have traced the individual nerve which conveys the *sensation* to the brain. Take sneezing, for example; we know that it is the fifth pair which receives the impression, and transmits it to the brain; and we further see that there follows the sensation, so produced, a peculiar excitement, drawing certain muscles into action.

It may be seen that, belonging to respiration, there are certain sensations which excite peculiar sympathetic actions, for the protection of this important function. It has not been asserted that the organs of respiration are peculiar in this respect: indeed, several instances have been stated, which show that the "principle of sympathy" extends over the whole body; and the only *peculiarity* of the respiratory apparatus is, that there exists a class of nerves destined for its functions, distinct from those which supply other parts.

If we attend particularly to the sensibilities which influence the act of respiration, we find that nature has guarded this function with a sensibility which is at all times awake. Under ordinary circumstances, it controls the complicated actions of breathing, without the cognizance of the will; and it becomes the object of our perception only, when danger to the function is impending. No sooner, however, is this the case, than there is a feeling of anxiety excited, by which the respiratory muscles are sympathetically roused to their utmost exertion. We

* See "Exposition of the Nervous System."

have frequent opportunities of observing the heaving of the chest and shoulders, the gasping and contractions of the throat, the spasmodic twitchings of the face, the energy that pervades the whole frame, in those who suffer from obstruction in the windpipe, or die from hemorrhage: the sensation seems to have its origin in the heart and lungs; being conveyed to the sensorium, it produces those phenomena through the medium of the respiratory nerves.

Through this sensibility, the heart and lungs are so combined, that, in all the variations to which they are liable, they are still found to correspond; the accelerated action of the one being directly followed by the excitement of the other. If there be an increased activity in the heart, it is necessary, for the circulation of the blood, that the apparatus moving the lungs should be accelerated in a corresponding degree; and, as the lungs themselves are passive, the influence must be sought for in those muscles which move the chest, the throat, and the nostrils.

"It is this painful sensation that introduces us to "this breathing world," which guards the vital functions through life as it draws us into existence. Pain is the agent which most effectually rouses the dormant faculties of both mind and body. While the child slumbers in the womb, it does not live by breathing, it possesses an organ which performs the office of the lungs. In the birth there is a short interval betwixt the loss of the one organ and the substitution of the other: nor would the breath ever be drawn, or the lungs perform their function, but for this painful and irresistible *viscus* which calls the whole corresponding muscles into action. Spasms and contractions are seen to extend over the infant's chest; the features are working and the muscles of the face agitated, probably for the first time; at last air is admitted into the lungs, a feeble cry is heard: the air in successive inspirations fully dilates the chest, and the child cries lustily: Now, the regular inspiration is established, and the animal machinery subsides into repose *."

——————— "We came crying hither;
"Thou know'st the first time that we smell the air
"We wawle and cry. I will preach to thee, mark
"When we are born, we cry, that we are come
"To this great stage of fools."—*Lear.*

In various powerful affections of the mind, there is a sensation referred to the breast, the existence of which is manifested by external signs. *Emotions* have been classed by writers on metaphysicks separately from the intellectual states of the mind, on account of the peculiar "vividness of feeling" which belongs to the former. It would appear that simple consciousness is too

* Essays on the Anatomy of Expression, by Mr C. Bell. *Second Edition.*

dull a medium for these affections of the mind to be impressed through it alone; and there is added an excitement of the frame, which gives intensity to the feeling. There is a certain turbulence produced in the action of the heart and the dilatation of the chest, and in the contractions of the throat and face, whenever the mind is intensely affected with emotion; thus, for example, in terror, the heart beats with force against the ribs; "there is a spasm on his breast; he cannot breathe freely; the chest is elevated; the muscles of the neck and shoulders are in action; his breathing is short and rapid: there is a gasping and convulsive motion of his lips, a tremor on his hollow cheek, a gulping and catching of his throat." The explanation of these phenomena seems to be this:—The nerves of respiration have been influenced by the condition of the mind to produce these actions; this disturbed state of the heart and respiratory organs is quickly referred to the mind, through that sensibility which we formerly said watches over them: and thus a sensation is produced, very nearly resembling that which accompanies threatened suffocation *.

This view of the matter illustrates how corporeal sensations are reflected to the mind, to render us more vividly alive to its emotions; and it also shows that the mind may rouse certain parts of the body into activity, independently of a preceding sensation. In these instances, sensation is not the cause, but the consequence, of the particular actions already produced in the body.

According to Dr Alison, in adopting Mr Bell's views,

"We should be obliged to suppose that there are bound up, in what is commonly called the olfactory nerve, one nerve destined for the perception of nauseous smells, and connected with the nerves of the abdominal muscles and diaphragm,"—(and the stomach, &c. if he supposes the act of vomiting;)—"one for the smells that cause faintness, connected with the nerves of the heart; and one for savoury smells, connected with those of the salivary glands. And in the fifth pair of nerves, we must suppose that there are bound up, one nerve for the perception of cold applied to the face, and connected with the phrenic and intercostal nerves, by which the act of inspiration is performed, and also with the cutaneous nerves of the whole surface, by which a general constriction of the capillaries is produced; one for the perception of irritations of the nostrils, connected with the phrenic and lower intercostal and lumbar nerves, by which the act of sneezing is performed; and one for the perception of pain in the eyeball, cheeks or

* For further illustrations of this subject, the reader is referred to the second edition of Mr Bell's Essays on the Anatomy of Expression.

teeth, possessing little or no connection with the respiratory nerves; and so in other instances."

If, indeed, we expected to see all obscure phenomena explained,—the effects, for example, of odours giving pleasure or pain, or exciting disgust and nausea: if all those singular nervous affections, which are variously exhibited in different individuals, had been attempted to be accounted for, by this new system of the nerves, we should have thought of Mr Bell's observations as Dr Alison does. But we have remarked that he most resolutely avoids entering on subjects of this kind, which promise no successful results. He has limited us to the observation of certain facts: he has taught which nerves convey sensation from the part to the sensorium: he has shown by what nerves the impression proceeds from the sensorium to the muscles, combining them into simultaneous operation. But he has not attempted to explain anatomically what connexions are formed betwixt the roots of the sensitive nerves and the muscular nerves in what is called the sensorium. We have heard Mr Bell propose it as a question in his Lectures, how far the motions of parts, excited by titillation or irritation, depend upon the connexions of the nerves in the body, and how far on the connexions of the nerves in the brain. For example, when a creature continues to breathe without its head, or when an acephalous fetus breathes without cerebrum or cerebellum, is there not a connexion between the heart and lungs and the muscles of respiration, without the intervention of the brain? He illustrated this question by mentioning, on the other hand, the muscles of the eye acting under the irritation of the eye, as a proof that the brain forms a part of this circle of relations; but the excitement of the heart and the intestines, contracting upon being distended, as other instances of the connexion being formed without the intervention of the brain. Dr Alison is not aware of the care with which Mr Bell has impressed in his Lectures, that there is a whole system of nerves, of which the powers are not yet ascertained,—those called the *sympathetic*, which may at some future time be made to resolve these difficulties.

It is only by observing the actions of certain parts of the body, and then by referring to the ascertained functions of the nerves which supply these parts, that we can distinguish which nerves were influenced directly by the sensorium in producing these actions: it therefore appears, that so long as our acquaintance with the functions of the nerves is imperfect, we shall experience difficulties in accounting for sympathetic actions. Thus, recurring to the instance of irritation of the eye, it was noticed, that, besides the spasmodic closing of the eye-lids, there was an increased secretion from the lachrymal gland, and a blush

of inflammation on the conjunctiva. It was not attempted to explain by which nerves the two latter circumstances were effected; because physiologists have not yet ascertained which nerves proceeding from the brain possess an influence over the secreting and the circulating organs. At present it is only stated by Mr Bell as a conjecture, that the sympathetic nerve controls these functions. But in explanation of the winking of the eye, we were enabled to say, that the portio dura caused this, because we know it is the function of that nerve to command the muscles of the face.

We, who are pleased with the simplicity and the interest which these views give to the nervous system, may be allowed to express a regret that an ingenious physiologist, conversant with many of those authors who have written on the *theories* of the nerves, should present us their *anatomy* in the same intricacy with which it has been hitherto enveloped.

Let us mark the advantages which the physiology of the nerves has derived from the strict attention which Mr Bell has paid to the facts of anatomy in his late investigations. First, he has shown the composition of the spinal nerves; that the whole range, arising from the spinal cord, having ganglions upon their roots, are sensible nerves: and that the anterior roots are muscular nerves: Secondly, that the fifth pair in the head is of the same composition with the nerves of the spine: Thirdly, that, as this nerve corresponds in structure with the spinal nerves, so it corresponds in function: Fourthly, he has distinguished the nerves of the face into two classes, and shown that they possess distinct endowments: Fifthly, he has proved that there is a set of nerves exclusively distributed upon the muscles of respiration: Sixthly, he hath shown, by comparative anatomy, that these nerves do not exist, except when the act of respiration is to be performed:—These form altogether a most brilliant proof of the importance of anatomical investigation.

We have heard some gentlemen say that these new views are very ingenious and very curious; but they have asked, of what use are they in the practice of medicine and surgery? We may reply, that it is impossible, in the early stage of any discovery, to foresee how far its influence may extend. But is it nothing to have proved that palsies, which were supposed to depend on the condition of the brain, may arise from local causes, quite independent of that organ, and comparatively of little danger?—To have pointed out to the surgeon the difference between a motor nerve and one of sensation,—and the consequent impropriety of cutting them indiscriminately in cases of tic douloureux, as formerly? Will any surgeon, who is acquainted with these new views, in operating on the face,

divide the portio dura, in the expectation that its functions would be performed by branches of the fifth pair? Or would he hazard the destruction of the eye, when operating on tumours of the face, by unnecessarily dividing those branches of the portio dura which pass to the eyelids?

In conclusion, we would say that it is to be regretted, with regard to papers such as we have been endeavouring to criticise, that the general reader, who may not, perhaps, be very intimately acquainted with the subject, is more apt to rely on the character of the writer, than to weigh critically the value of his arguments.

PATHOLOGY.

Remarks on the subject of Life and Organization. By John Clendinning, M. D. (Continued from p. 114.)

Part II.

On a former occasion I hazarded some conjectures with respect to the cause of the diversity observable amongst the hypotheses that have been offered, on the subject of life and organization. The cause, or at least principal source, I stated to be the ambiguity of the names "life," "vital principle," and their equivalents. The disputes amongst writers on the etiology of organization and organic changes, I found to be mainly owing to inattention to that ambiguity, and to consequent mutual misunderstanding, and to not unfrequently apparent self-contradiction. I endeavoured to explain how it is, that, on the subject in question, viz. the cause of vital phenomena, several positions, different, but not opposed, might by the same person be affirmed, without any the slightest inconsistency. I particularized four out of many meanings of the word Cause and its equivalents, on account of their being the senses in which such terms are most usually employed in scientific discourse. The meanings I specified are, with one exception, such as have been pointed out by Aristotle.

1. The efficient cause, of the theologian and metaphysician.
2. The instrumental cause, or necessary condition, of the physical inquirer, practical moralist, politician, &c.

Under this second head, I may here mention, falls what is often called the efficient cause, or simply the cause of a given effect in physics and in popular discourse. The briefest explanation is generally an apposite example; when, therefore, one billiard ball strikes another, the first impelled ball A, or the stroke it gives to the second ball B, is called the efficient cause, or simply the cause of the ball B's motion; that is, the appulse of A was the sole condition wanting to complete the circle of causes or conditions required for the production of the desired motion

of the ball B. In such cases the efficient cause is, unless incidentally, of no more consideration or importance than many others, being itself but one of numerous conditions that conspire to bring about the effect, any one of which might in its turn become entitled to the distinction. It is then merely a temporary and incidental superiority, and not of necessity, in any degree, founded in the permanent relations of things.

Under this head fall also such final causes as correspond with physical causes. For an explanatory example; the immediate effect or operation of fibres, masses, or particles, when effecting change, cannot have escaped the omniscient Creator. That effect, therefore, he must have had in contemplation in the formation or production of such organs, particles, &c. The capacity by which such effect is produced, we call a property of a body; in other words, a physical cause; the other class of final causes with which those are contrasted, are those whose production is remote, and we might say contingent; ex. gr. the happiness arising to man from the exercise of his organic powers.

3. The final cause of the speculative moralist, physico-theologian, &c.

4. What I have ventured to call *premonitory cause;* in other words, the uniform antecedent, unfailing sign, &c. of Hume and others.

I likewise classified opinions relative to life and organization, dividing them into three sorts, viz. 1. Such as ascribe life, &c. to the agency of certain intelligent active substances; 2. Such as ascribe life to certain material elements or combinations of elements; 3. Such as assign, as its causes, certain abstractions or nominal entities. Having, however, furnished no reason for thus modifying the division of Dr Barclay, I shall here supply that defect.

Dr Barclay divides opinions respecting the etiology of organization, &c. into two classes. 1. Such as refer the vital phenomena to a "certain organism of the materials of which the visible structure is composed, or to a principle totally distinct;" and he writes to shew that the former hypotheses are unsatisfactory and absurd. From innumerable passages of the "Inquiry," &c. and particularly from the Summary, where he rails at materialist theories of life, and affirms the Mosaic account of the origin and multiplication of organized structures to be the only one worthy of attention, I infer, that the object the excellent author had in view, was the overthrow of certain obstacles to the progress of orthodoxy amongst medical students; and consider myself therefore warranted in regarding the work rather as theological than physiological, and his division countenances that opinion, consisting simply of two branches, viz. those which admit and those which reject a distinct vital principle; a division equally natural for the divine, and unsatisfactory to the biolo-

gist. I have therefore split Dr Barclay's second member into two parts, which constitute the second and third members of the division above proposed. I shall now justify that division by examples.

Of the first subdivision of opinions I need not travel far for an example: Dr Barclay furnishes us with one in his own person. The impression on my mind, from the perusal of his "Inquiry," is, that, under God, the soul, or some not dissimilar substance, is, in his opinion, the cause of organic phenomena. This seems particularly plain from p. 521 et seq. of the Inquiry. Dr Barclay furnishes there an instance of the first class; many more might be added.

Of our second class there are several examples.

Dr Barclay gives none that are quite unequivocal. We may instance under this head the speculations of Beddoes, Girtanner and others, respecting the influence of oxygen on animal life; and those of various foreign and domestic physiologists, relatively to the agency of electric or galvanic emanations in the causation of muscular contraction, of secretion, of calorification, &c. The paramount influence attributed by each of the inquirers above alluded to, to their favourite elements, warrants my considering their opinions as examples of the class of hypotheses under consideration.

If it be objected to this view, that these chemical and galvanic etiologists admitted that nitrogen, hydrogen, lime, carbon, &c. were essential articles in the aliment and economy of a muscle or secernent vessel, as well as oxygen or the electric aura; it is answered yes; and it is further urged in reply, that it is by animists admitted, that the brute elements just named, are, *as materials*, quite as necessary to the formation of an organized part, as is the designing and arranging vital principle; yet the propriety of placing the latter in the first division, cannot be questioned: and the same reasoning applies to the second.

Of the third class there are also many examples. Several of this kind have been noticed by Dr Barclay in his third chapter before referred to. Under this head fall the irritability of Haller, and Bonnet; the sensibilities of the Montpellier school, of physiologists, and of Bichat; also the excitability of Brown. It has not, so far as I know, been pretended by those biologists, that by those titles they designated any substantial entities, whether intelligent or unintelligent, to whose operation they attributed the vital phenomena. On the contrary, they admit them to denote merely properties, tendencies, laws; in other words, nominal entities.

It might be said, that those laws, properties, &c. imply forces, *i. e.* substances in action; and, that the hypotheses assigned to the head of abstractions, properly fall under one or other of the former.

That, however, seems an unnecessary refinement. Dr Barclay appears, indeed, to have been influenced by some such view in his division of hypotheses respecting organizatian. His example, however, cannot be safely followed. Surely it is one thing to attribute life to an intelligent substance, or to chemical agencies, and quite another to ascribe it to some law, tendency or property. As long as a writer confines himself to a law, property, *nisus*, or any similar principle, in assigning causes for phenomena, he is still at liberty to borrow a substratum or subject for such tendency, &c. from the intelligent or unintelligent creation. His tendency, law, &c. may be considered at his option, as affections or habitudes of a soul, or vital principle, or of an atom or atoms. His reasoning involves necessarily neither materialism, nor its opposite. Those hypotheses constitute then a class by themselves.

Three classes, therefore, of hypotheses relating to the etiology of life and organization, present themselves for consideration.

The first refers life to a sort of spiritual agency ; the second, to corpuscular forces or arrangements; the third, to certain laws, tendencies or properties. I proceed to offer some observations on the physiological merits of each of those classes.

The formation, impregnation and developement of the ovum, present a series of appearances that excite wonder, and confound curiosity. Those changes have not been reduced to any laws of mechanics, chemistry, or any other science. The connexion between the changes of colour, weight, dimensions, &c. that constitute the growth of the fetus, have not been satisfactorily explained on any principle of physical causation. It has consequently been by many thought necessary to admit, that the conduct of the processes of generation, growth, &c. is not entrusted to general laws, but that in their favour an exception has been made ; and, that an active intelligent being, called a vital principle, or something equivalent, is charged with the immediate execution of that branch of the immense work of production. This genius or principle permits, modifies, or suspends the operations of the common tendencies of matter, according as the effects towards which they incline are hostile or friendly to the wellbeing of the frame. It prevents injury to the constitution, by exciting in it, when exposed to morbific agencies, counteractive efforts, and a salutary resistance ; and, it cures disorders, by setting up some remedial action, some cutaneous eruption it may be, or philanthropic diaphoresis, or critical diarrhea. Those formative and preservative functions have, by some, been superadded to those which are by general consent attributed to our intelligent substance, or soul ; whilst others have preferred assigning them to a distinct principle, in-

dependent of the intellectual, and holding with it but little, if any, intercourse; resembling it, however, in many respects, and differing from it in rank, rather than in race.

Those modifications of the doctrine of a vital principle differ in several points. Since, however, they are, in a physiological point of view, open to the same objections, I shall not enter into any examination of their respective individual merits, but content myself with attempting to prove that they agree in being to all the ends of medical science useless.

The principal ulterior ends of useful research every one admits to be increase of power, over the external actions of intelligent beings, or over the propensities and combinations of material substances. It is plain, that we must know what those objects, whether intelligent or the reverse, of whose aid we stand in need, are qualified for, and how far, and by what means, we shall be enabled to influence or use them, before we can reasonably calculate on ultimate advantage from their assistance. Some means of access become necessary, that we may observe them, detect their capacities, and obtain some directing or controlling power over their operations. The knowledge, therefore, of the fact (admitting it to be such), that our organs are built up and maintained in their usual state by an intelligent being, is, however interesting in other respects, altogether useless to the physiological etiologist; for no means exist of becoming acquainted with the projects of the animating genius before their execution. The Stahlian admits, that the operation of the soul, in its subaltern office of vis formatrix, conservatrix, medicatrix, or vital principle, are not traceable by the eye of consciousness, or are so to an extent so small, that little or no practical knowledge can be gleaned in that quarter from internal observation. The advocate of a distinct animating entity or principle avows, that his favourite cause of life works altogether in the dark, and makes known its existence and activity only by the effects he supposes it to produce. By admitting both of these, we are after all obliged to trust to experience,—to guess at the import of phenomena,—to grope about, in short, for truth, as blindly and as helplessly as before we became acquainted with the cause of life and organization. The knowledge, therefore, of the existence of an animating being, is of as little interest or value to the *biologist*, as is the certainty of that of an All-seeing, Almighty spirit, to the *chemist* or *natural philosopher*. If, then, I have not misstated the admissions of the *animists* and *vitalists*, I may fairly ask, what reason is there that their speculations, relatively to the causation of organic changes, should not be scouted by the medical etiologist?

Let it not be said that the *vital principle* and intelligent spirit are defensible on similar grounds, and that he that refuses to re-

cognize the one, must, if he will be consistent, reject the other; for the cases widely differ. A calm survey of the history of sensation, volition, and remembrance, leads the mental physiologist inevitably to the hypothesis of a permanent simple substance; the earliest reflectors invented it, the latest have, with few exceptions, adopted it. But organic phenomena are by no ingenuity reducible to any one code of laws; with no shew of reason referrible to the exclusive agency of any one substance. There is one code for the heart, another for the uterus, a third for the stomach, and a fourth for the brain. What evidence, whether from internal or external observation, can be adduced to connect together, as in the case of a wounded liver for example, the injury of one day with the inflammation of another, and the suppuration of a third, the pointing of a fourth, and cicatrization of a fifth; to connect, I say, those accidents, so as to render necessary or expedient the hypothesis, that all those changes have been undergone, or been at least preceded and caused by changes undergone, by a simple substance having the liver for a seat,—by the vital principle. We cannot, it must be admitted, adduce evidence from consciousness; and the problem plainly admits not of solution by experiment. The grounds, therefore, of the hypothesis of *a soul*, are in principle different from those of the doctrine of an animating spirit or vital principle.

On the whole, it does not appear to me, that, for the physiological doctrine of a vital principle, any better reasons can be given, than might be urged in favour of the will-a-wisp, wind, wood, and water spirits of popular superstition.

We come now to the consideration of those speculations which attribute life to chemical elements. For reasons, however, which will appear in the sequel, I shall offer what observations occur to me relatively to that class of hypotheses, in conjunction with what I propose to make on the third class, or those that assign, as the causes of life, certain abstractions or nominal entities.

In strictness, and with literal accuracy, there is but one class of productive causes,—substances. A power, quality or property abstractly considered, being, unless to the mind's eye, a non-entity, cannot, without rhetorical latitude of expression, be called a cause, or be designated by any equivalent appellation. In discourse, however, as well scientific as popular, effects are ascribed to events, properties, laws, forces, &c.; muscular contraction is referred to irritability, secretion, deposition, &c. to a peculiar sensibility co-operating with a peculiar contractility; the vital phenomena have been, *en masse*, ascribed to excitability; and each of the functions, in turn, to nervous influence.

The explanation of the apparent inconsistency just alluded

to, will contribute towards the attainment of the object for which those pages have been written.

The sciences that have the investigation of nature's works for their end, treat of the order and causation of the phenomena of mind to the exclusion of those of matter; or they treat of matter alone. Under the latter head physiology almost entirely falls. Through the nervous system alone, and consequently only in the case of animals, has what physicians call physiology, any the least connection with mental science. With the exception of that extreme point of organic nature; it is, in all quarters, completely excluded from the domains of the ideologist and psychologist. The researches, therefore, of the physiologist are almost exclusively directed to ascertaining the physical causes of organic changes.

In physical science there are two sorts of objects sought after. In some of its departments research attains to nothing beyond the rule of action, or law of change. In others it does not cease, until the very species of matter, whose influence is under investigation, or even the particular masses of it that are engaged, be determined. The term of Newton's researches respecting gravitation, was the announcement of a law of change. The result of Priestley's examination of red oxide of mercury, by means of a lens, was the discovery of oxygen. Each philosopher attained the boundary beyond which any advance seems impracticable; yet it does not appear that their results, though perhaps alike complete, regard being had to the nature of their inquiries, are equally satisfactory, or that they approach equally near to a full solution of the questions to which they relate. Again, Haller ascertained that the contraction of muscles was attributable to an inherent force which he denominated irritability. Mayow discovered, that the end or use of inspiration was the introduction of a vital salt or nitro-aërial spirit, *i. e.* oxygen, into the lungs; and its effects, the change that causes animal heat. Now, Haller made a great step in advance by establishing, in opposition to neurological hypotheses, the independence of the property or law of irritability. But the chemical views relating to animal heat are less mysterious, more specific and satisfactory, than Haller's hypothesis on the subject of muscular contraction. —A detailed example will best elucidate my meaning.

When Newton refers the tides, planetary deflections, and centripetal motions, to gravity, he assigns no cause for those phenomena. He merely simplifies our views with respect to their causation, by shewing, that the changes in question must be referred to some one unknown cause, or combination of causes, and not, as might have been imagined, to three different causes, or combinations of causes. Of this the queries in his optics, respecting the means by which gravitation is effected, prove that he

was fully aware. Again, when Haller ascribes to irritability the contraction of the heart on the blood, of a muscle, the sterno-mastoid for example, on being pricked, or in consequence of a volition to that effect; he does not explain, *i. e.* he assigns no cause for those appearances. He makes merely an approximatory step towards a satisfactory explanation, the amount of which is, that those changes are referrible either to some undetermined substance or combination of substances, different from those that cause sensation, absorption, &c. or to the same substance or substances acting in a different manner, or, in technical phrase, according to a different law.

When, on the other hand, Priestley obtained oxygen from red oxide of mercury, he not only established the law, according to which mercury is rendered red, fixed, &c. after certain processes, but he likewise discovered a principal substantial cause of that change in the metal; also, when chemists have ascertained that the presence of oxygen in the lungs is necessary to the ends of respiration, they are much nearer to a complete knowledge of the functions of the pulmonary apparatus, than one who should know merely, that free passage must be allowed through the trachea to he knew not what. For a person acquainted with the chemical part of the respiratory process, and with the structure of the lungs, but who had never witnessed or been told the phenomena of strangulation, would, notwithstanding, at once foresee the deadly consequences of a ligature on the trachea; whereas, an anatomist unacquainted with pneumatic chemistry, would not be able to tell, whether death from strangulation should be attributed to the retention of a poison, or to the exclusion of a nutriment; much less, whether the matters retained or excluded were gaseous, vaporous, crystallizable, or the reverse of any, or all of these.

There are, therefore, two modes of replying to physical inquiries, viz. by assigning the substance or substances that cause the effect; or, where that cannot be done, pointing out some rule or principle by which the phenomena may be connected together in their natural order; or, in other words, their laws of coincidence and succession.

A property, then, or state, or event, or force of whatever kind, not appropriated to some substance or substances of ascertained character, is merely what, with Degerando, we may call an archetypal idea, or, with Bentham, a fictitious entity, and cannot be a productive cause—cannot, unless rhetorically, be called a cause. To assign, therefore, any such abstraction as an event, state, property, or law, as the cause of some other event, property, state, or law, is, if it has a meaning, equivalent to affirming that both the effect and cause referred to, are

really joint effects of some common cause, or causes, unnamed or unknown.

There are two combinations of circumstances in which the determination of the substantial causes, where God has interposed such, becomes impracticable, viz. when those causes are either too remote, or too subtle or minute. If centripetal appetency be attributable to another, then gravity is inexplicable, and is, therefore, to be regarded as an ultimate fact, from the latter circumstance. If there be a void in the heavens, then it is inexplicable from the former. If, again, irritability be owing to a nervous emanation, then its cause is too subtle for our senses, &c. Such seem to be the only cases in which explanation, by assignment of substantial causes, is, from the nature of the thing, impracticable. In other cases, in which we cannot name the substantial causes, we are disqualified, by mere ignorance, for explication of what is not, in its own nature, beyond the reach of ingenious industry.

To apply the matter of the foregoing remarks to the second and third classes of hypotheses respecting the etiology of life and organization,—Sensibility has long figured amongst the organic powers, more familiarly known under the title of Vital Properties. The matchless Haller did not, with the sophist of Malmsbury, believe that that which is not matter is nothing, yet he speaks of nervous sensibility, of nerves feeling pain, &c. Other foreign physiologists speak of a kind of sensibility altogether different from that just alluded to, which is organic, like the former, but differs from it in not affecting the intelligent inhabitant, or causing sensation. Each kind of sensibility is referred to as a cause of particular phenomena: now, it appears undeniable, that nerves do not feel, and are in no degree susceptible of that state called Sensation. Sensibility is a mental power or property, and belongs of right to the department of the mental physiologist. The medical physiologist is concerned with the organic conditions of sensation; the material elements, and combinations of elements, that render sensation possible to the soul, and with those only. Assuming then, still, the soundness of the views relating to the nature of physiological enquiry, that have been above stated, may it not be affirmed, that to refer an organic state or change to nervous sensibility, is, if strictly and literally understood, as objectionable, as to give gold the credit of almsgiving, or to consider bread the cause of valour, eloquence, and virtue?

The mind alone is sensible; the nerves minister to its appetite for sensation; and this is generally admitted by those who employ the form of words objected to. In this, as in many other cases, we are not made aware of the extent to which our line of march diverges from the true path, until we have already

wandered far from the direction in which we started. Without tracing the erroneous attribution of sensibility, above noticed, to its ulterior consequences, we cannot fully estimate the importance of the first deviation. This will perhaps satisfactorily appear, from an examination of what is called organic sensibility by the French, in its relations with what they denominate animal sensibility, and contrasted with the indisputable faculty or property, mental sensibility.

I have said, that, to call the nerves sensible, is to commit an error. I admit, at the same time, that the inaccuracy is, in itself, of trivial import. The deviation from perfect logical truth which it involves, is so inconsiderable, that we can experience no difficulty in retracing our steps at will, and resuming the right line of advance. When, however, from ignorance or thoughtlessness, we persevere in our new and false direction, objects quickly intervene, and we lose sight of the point at which we stepped aside; the result is a painful and discreditable retreat, or else the annunciation of some miserable paradox or extravagant conceit, as a discovery of the last importance. And this appears to me to have been exemplified in the case of organic sensibility.

Haller said the nerves possessed feelings:—meaning thereby that those organs are the instruments more immediately concerned in the production of sensation. Other physiologists, (whether from partiality to materialism, or from having but confused and inaccurate notions respecting mind, I need not inquire,) argued, that, if any one material organ be allowed to possess sensibility, so may any other; and, conceiving that an extension of the power of sensibility to organs not nervous, would greatly facilitate the explanation of various vital phenomena, multiplied the number to an extent that outruns all belief. They furnish us with a sensibility for every organ and for every system or tissue. In short, they inflate the error to its utmost magnitude, and maintain it in all the absurdity of its consequences.

Organic vascular sensibility is, therefore, a natural consequence of the admission of organic nervous sensibility; and it is only, perhaps, when pushed thus far, that the mischievousness of the first incautious attribution of sensibility to nervous matter can be adequately estimated. Matter, then, is capable of sensation, or it is not. If not, what shall we say of the etiology that explains the deposition, adaptation, removal, of organic molecules, by a certain contractility, which is controlled and directed in its operation by a certain sensibility, in other words, by certain vascular likings and dislikings; which says, that a vessel admits one set of particles, because they are suited to its sensibility; or, in other words, pleases its palate, and rejects or refuses admission

to others, because they are not in relation with its sensibility; or are, in other words, ungrateful to its feelings? In what respect is such philosophy better than that, which referred certain effects of atmospherical pressure to Nature's horror of a vacuum? Must not, then, the judicious biologist, although he even admit nervous sensibility, still, with salutary inconsistency, reject all other varieties of organic sensibility?

It appears, then, that nervous sensibility, signifies merely the capacity possessed by the nerves of causing the mind to feel by instrumentally producing sensation; and by no means any power of feeling attributable to those organs. It appears, also, that organic sensibility means nothing; or else it is a vague expression equivalent to susceptibility of change, capability of being acted on, or modified by causes. It appears likewise that those phenomena which are with propriety, according to usage, referred by physiologists to sensibility, as their cause, must, in a sound etiological system, be regarded as effects either of the intelligent spirit, or of the substantial elements that constitute the nervous system.

Excitability is still less defensible as a cause productive of organic modification, than sensibility. Excitability means nothing, or else it means capability of exhibiting phenomena similar to those that are peculiar to living bodies. Now, to refer vital changes to a capability of life, or of undergoing vital changes, is to commit the very fault which has drawn down on the excellent Aristotle such censure, for having, by way of explanation, referred gravitation to a tendency downwards.

With respect to stimuli, or, speaking less poetically, and ambiguously, stimulants; they appear to be physical or instrumental causes. For although the heart will contract alike on being pricked with silver, steel, or brass, or on being moistened with alcohol, sprinkled with water, immersed in warm water, &c. after having ceased to throb; and although it can pulsate without any of the preceding applications, yet, considering the constancy of the succession of throbbing to pricking, &c. it must with convenient restrictions be supposed, that the pricking, &c. supply conditions necessary in some circumstances to the contraction.

In general terms, it may be said, of doctrines of either sort, whether they attribute life, &c. to material causes, or to laws or other abstractions, that, if founded on ample induction, they are useful, and promote the ends of scientific research—they flow alike from the genuine sources of human wisdom, observation, and experiment—they correct erroneous views, and serve as stepping-stones to farther advances and attainments. But they are not of equal rank or value in the eye of the physiological etiologist. He is aware that they do not equally increase his power over nature. He knows that it is one thing to inform

him that chylification is effected by certain powers or properties of the stomach, or of its contents, or of both, and quite another to let him know, that it is effected by a certain menstruum, aided by a certain heat, and certain vermicular intestinal motions, that it is much to have ascertained that secretion is due to some nervous influence or emanation, admitting for a moment that hypothesis; but still more to be assured, that the nervous system for instance, is a sort of electric apparatus, and that secretion is effected by the instrumentality of the galvanic fluid to which the nervous chords serve as conductors. The one makes him acquainted with a fact or effect; the other goes further, and points out the means of its production, and arms him often to a greater or less extent with the power of imitation. The ascertainment of the law of succession or change, is but the preparatory step towards the discovery of the substantial causation, which latter is the true completion of the investigation. It appears, in fact, that a complete biology would be able to assign for each organic state or modification the corresponding elementary causes or combinations of causes. It is not, indeed, to be dreamed, that the ingenious projects of the mythologist or romancer, will at any time be realized, and that we shall ever attain to such a knowledge of the chemistry of its living laboratory, as to be able to make animated bodies by means of affinities, or other corpuscular forces. However wonderfully we may have succeeded in imitating some products of vital actions, as in the instances of oxalic acid, tannin, camphor, resin, gum, &c., it would still be the height of absurdity to expect, that the chemist, or any other cultivator of natural science, will ever attain to the composition of a bark, a kidney, or a leaf. It is, notwithstanding, only in proportion as the physiologist makes progress in that direction, that he is, in my opinion, warranted in believing that his science is making solid advances.

PHARMACY.

On the Colour produced in Essential Oils, by Nitric Acid, and its analogy with that of some poisonous substances. By M. Bonastre. (From the Journal de Pharmacie, et des Sciences accessoires.) Communicated by A. T. Thomson, M. D. &c.

THE only paper in the November number of this Journal, of a pharmaceutical character, is by M. Bonastre "*On the Colour produced in Essential Oils by Nitric Acid, and its analogy with that of some poisonous vegetable substances.*" It is too long to

be translated, and cannot be satisfactorily analyzed. The following are the conclusions which the author has drawn from his experiments.

" It may be concluded," says he, " that certain colourless, or nearly colourless, essential oils, may, when mixed with nitric acid, be coloured yellow, red, rose colour, blue, or green, deep violet, or amaranth.

" That when, by distillation or other processes, these oils have not been completely freed from the resins with which they are naturally united, these develope with nitric acid the same colour as their essential oils, but in a much smaller degree, and according to the quantity of the oil retained.

" That the bitter extractive principle and the *subresin*, well purified, develope no colour by the action of nitric acid.

" That the property of producing a red or an amaranthine colour, by the contact of nitric acid, cannot constitute a certain indication of the presence of morphia, brucia, or strychnia, &c.

" And, finally, that the immediate coloured principles of vegetables depend, probably, on combinations which are still unknown."

It may not be known to all of our readers, that M. Bonastre denies the existence of the vegetable alkalies, and refers the qualities which have been attributed to them, to principles which he terms *subresins;* and he states, in the above paper, that M. Vauquelin now concurs in this opinion. This assertion, however, M. J. Pelletier, in a critical review of M. Bonastre's paper, inserted in the December number of the Journal, affirms to be incorrect, and also points out several errors in quotations of his own experiments by M. Bonastre. As it is not our wish to become a party in any controversial discussions, we refrain from noticing farther the opinions of either side.

On the Method of obtaining Strychnia. By M. Robiquet.
(From the Journal de Pharmacie, &c.)

M. Cerriol, a young chemist, the operator in the laboratory of M. Pelletier, conceiving that he could procure strychnia more economically than by the methods adopted by MM. Pelletier and Caventou, or Mr Henry, published his opinions, the examination of which by the celebrated analyst whose name stands at the head of this article, forms the subject of the paper now under our consideration.

M. Cerriol proposes to macerate the rasped nux vomica in cold water, and to repeat this maceration, in fresh quantities of water, for three successive times, continuing each maceration eight days. He then mixes all the infusions, evaporates the mixture to the consistence of syrup, and treats the residue with alcohol, to separate the gum. He next evaporates this alcoholic tincture in an alembic, redissolves the residue in water to sepa-

rate the fatty matter, and, by means of a small quantity of lime, decomposes the solution, which, according to him, contains igasurate of strychnia. The calcareous precipitate which he thus obtains, after having been dried, is treated with boiling alcohol, to dissolve the strychnia; and, by evaporating the tincture in a close vessel, he procures that organic base. It is, however, not yet in a state of purity; but contains a little fatty matter and some *brucia;* to free it from which it must be macerated in weak spirit; and, if it be intended to be crystallized, it must be again dissolved in boiling alcohol, and the solution set aside to crystallize by spontaneous evaporation.

M. Robiquet admits, that the above process is both economical and expeditious; but he, nevertheless, objects to it on the ground that the product is less considerable; and he doubts whether the simple maceration in cold water "be capable of exhausting of its active principles so compact a body as nux vomica: this, however, may depend on the quantity of water employed at the temperature of the air. At least I have observed," (says he) "that nux vomica, thus diluted, and exposed to a temperature of 15° to 20° Reaum., undergoes a true vinous fermentation. On one occasion, among others, I put 100 pounds of nux vomica into a boiler; and, having poured over it a quantity of water sufficient for the first decoction, I covered it up, and left it to macerate until the following day. Some pressing operations, however, obliged me to leave it for four days; at the termination of which, on uncovering the boiler, I found the nux vomica in a state of full fermentation, and disengaging gas with a very strong vinous odour,—a fact, by the by, which refutes the opinion of those who contend that nux vomica contains no saccharine matter, which was first pointed out by MM. Chevreul and Desportes. I was apprehensive that this accident would have destroyed the strychnia; but, on the contrary, the extraction of that principle seemed to be facilitated by it, owing, perhaps, to a destruction of part of the gummy matter. Might not this have happened in the process of M. Cerriol? And, if such was the case, it is to be feared that the acid which remained combined with the strychnia, was not the *igasuric.* This, however, is merely a simple conjecture; and I know that our young colleague is now occupied in the examination of that salt, of which he has hitherto procured small portions only, although he has operated on large quantities of nux vomica. In my opinion, this investigation is a matter of great importance, since it will contribute to ascertain the pre-existence of the organic alkalies, of which I have still doubts, in spite of all that has been said on the subject, and make us better acquainted with the *igasuric acid*, which as yet I have not seen."

"The process of M. Cerriol may be attacked, also, on another and more important point; for, in admitting that it is more economical, it remains to be proved whether the product be as pure as that procured by the method of Mr Henry; or why, as M. Cerriol informs us, must the strychnia which he collects, and which is at first mixed with brucia and fatty matter, be washed in weak spirit, then redissolved in alcohol, and submitted to a slow spontaneous evaporation, in order to obtain crystals, when the process of Mr Henry, in which the successive treatment described by M. Cerriol is not required, enables us to obtain these from the first boiled alcoholic solution, by simple cooling. It is thus that I have always prepared it; and, in this manner, was prepared that specimen which I had lately the honour of presenting to the Section of Pharmacy; and which was acknowledged by my brethren to be the most beautiful which they had ever seen. In following, however, the usual process, I take the precaution not to push the distillation of the tincture so far as has been advised; and I dilute the residue with a little cold alcohol. I procure, by this method, a grey powder, of a white colour, which is deposited at the bottom of the vessel; and I continue the washings as long as any colouring matter is taken up, before I subject it to the action of boiling alcohol. The strychnia is deposited, on cooling, in distinct crystals. I then distil the mother-waters successively to one-half or three-fourths; and I find, after each cooling, crystals more voluminous than the former, but less white, having nearly the form of the crystals of cream of tartar,—very elongated octahedrons. The first or purest crystals dissolve in nitric acid, without producing any red tint; a property which was pointed out by MM. Pelletier and Caventou, in their work upon the *upas*, as being the test of the purity of strychnia. In this state of purity it possesses also a character which has been denied, that of melting before it is decomposed."

We have given this paper more in detail than we otherwise might have been inclined to do, were we not convinced that too little attention has been bestowed on the preparation of the organic alkalies in this country; and that the difficulty of introducing them into general use, as remedial agents, has arisen, in a great degree, from that circumstance.

Pharmacopœia Collegii Medicorum Regis et Reginae in Hibernia. 8vo. Pp. 296. Dublin 1826. Continued from vol. iii. No. v. p. 128.

The fifth section, "Sales Terrei," presents the following changes and adoptions.

Barytae murias is now introduced, and directed to be pre-

pared nearly in the same manner as described in the second formula of the Edinburgh College. The sulphate of barytes is roasted with charcoal, which, decomposing the sulphuric acid, first changes the sulphate into a sulphuret, and then a hydroguretted sulphuret is formed by the decomposition of the water during the boiling of the sulphuret, and this in turn is readily decomposed by muriatic acid, and the muriate formed. It is, as we have already said of another preparation, an operose process; and the result, as a medicinal agent, scarcely worth the trouble it requires.

Following the Edinburgh College, also, a solution of the above muriate, "*Barytae muriatis aqua*," is now ordered. The solution is directed to be of the specific gravity 1230.

Calcis murias.—This is another adoption, and is directed to be prepared by evaporating to dryness the strained solution of the fluid which remains in the retort, after the distillation of the solution of caustic ammonia. The preparation of *calcis muriatis aqua* is also now prepared by a direct solution of the salt.

Calcis phosphas præcipitatum.—We are rather surprised to observe that this precipitation of the earth of bones has found a place in the present work. *Magnesiae carbonas* is now substituted for the old term *magnesia*; and an unnecessary preparation, under the title *Magnesiae sulphas purum*, introduced. We say unnecessary; for the epsom salts of commerce are now prepared with so much care, and in such a state of purity, that we are certain this formula will never be acted upon.

The sixth section, "SULPHUREA," contains those preparations in which sulphur is a principal component.

Ammoniæ hydrosulphuretum.—In the new formula for this preparation, sulphuric acid is ordered instead of the muriatic of the former pharmacopoeia.

Ferri sulphuretum.—The simple method recommended by Mr Cruickshanks for preparing this sulphuret is now adopted. It consists in rubbing a bar of iron, raised in a smith's forge to a white heat, on a roll of sulphur, and receiving the globules in a vessel filled with water.

Potassæ sulphuretum.—The proportions of the ingredients for making this preparation are changed; the quantity of sulphur being now one-fourth part only of that formerly ordered. It would render the mixture more easily effected, if the carbonate were previously deprived of its water of crystallization, by exposing it to a red heat; but the College has overlooked this fact.

Sulphur antimoniatum fuscum.—This to be prepared according to the formula of the Edinburgh College.

We doubt the propriety of placing the preparations with iron, mercury, and antimony, in this section, as the sulphur in all of them is in very small quantity in proportion to the oxides of the

metals which they contain; and the more correct arrangement of these preparations would be under the heads of their respective metallic bases.

The seventh section is termed "METALLICA," and we are certainly surprised to find that *Pulvis antimonialis*, after all which has been said and written, and said and written truly, of its inertness, and consequently its inutility, should still be retained by the Dublin College. Having thus stated our opinion of its remedial powers, it is unnecessary for us to make any comment on the method of preparing it.

Liquor tartari emetici.—This is the aqueous solution of the tartrate of antimony and potass, ordered by the London College, under the absurd name *Vinum* Antimonii Tartarizati. The Dublin College has avoided the incongruity of employing the term *Vinum* in a preparation which contains no wine; but, as if corporate bodies had an exclusive privilege of doing what no individual would attempt, it has rejected the name of the salt contained in the solution, and adopted its synonyme, Tartarum emeticum. It is not easy to conjecture a reason for this change: for, if the appellation *Antimonii et potassæ tartras* be admissible for the salt, no change being effected by its solution, why, we would inquire, is it not continued to designate the solution?

Argenti nitratis crystalli.—The nitrate, in this preparation, instead of being fused and run into moulds for surgical purposes, is directed to be crystallized. What advantages are expected from this state of the salt, we know not; the fused salt answering every intention for which it is usually employed.

Arsenici oxydum album sublimatum.—The directions for this preparation are a modification of those of the London College. In either work it is superfluous; the white arsenic of commerce being sufficiently pure for medicinal use. It is, however, a better preparation than the *arsenias kali* of the former pharmacopœia, for which it is substituted.

Liquor arsenicalis.—This is the preparation of the London College.

Bismuthi subnitras.—This is an adoption, also, from the London Pharmacopoeia; but the solution is aided by heat, and the proportions are different, both the acid and the water being in greater quantity than ordered in that work. The product, however, is the same, a hydrated oxide of bismuth, combined with some nitric acid.

Cupri ammoniati aqua is now ordered to be prepared by dissolving one part of ammoniated copper in one hundred parts of water, and filtering through paper, instead of the operose preparation, the place of which it supplies. It is a weaker solution than the old preparation, as much of the oxide of the ammoniated copper is precipitated by the excess of water used for the simple solution.

Ferri sulphas.—The preparation of this salt is much facilitated by the increased proportion of water which is now directed to be employed.

The preparation termed *Murias ammoniæ et ferri,* has been properly rejected.

Ferri tartarum.—The process of the London College is now adopted for this preparation; but we are of opinion that this is not an improvement; for much of the iron remains as a simple oxide, when the metal is employed, however fine drained the wire, or however minute the filings, may be; whereas with the carbonate a perfect triple salt is the result.

Vinum ferri is rejected, upon what account we know not. As directed to be prepared in the former edition of this work, it was undoubtedly a useful preparation in the debilities of childhood; and had the advantage of being so little unpleasant to the taste, that children had no objection to take it.

Hydrargyri oxydum nigrum.—This preparation, which is new to the Pharmacopœia, is produced by decomposing calomel, by means of the solution of caustick potass. The calomel and alkaline solution are directed to be rubbed together until the oxide, which is of a black colonr, is obtained. The oxide is to be dried upon bibulous paper in a moderate heat. The quantity of the solution of caustick potass, four times that of the mercury, is unnecessary and extravagant.

Hydrargyri persulphas.—This, which is a new preparation, is directed to be made by dissolving, with the aid of heat, six parts of purified mercury in a mixed acid; composed of six parts of sulphuric, and one part of nitric acid, and then evaporating to dryness. This salt, which, it may be observed, can be procured without the aid of nitric acid, by merely boiling one part of mercury in three parts of sulphuric acid, and continuing the action of the heat until the acid be so far decomposed as to afford to the mercury an additional dose of oxygen, and convert it into a peroxide, is now used in the preparation of sulphuric oxide of mercury, corrosive sublimate, and calomel; but, as far as we know, has never been employed *per se* as a medicinal agent.

Hydrargyri murias corrosivum.—The process now adopted, in which five parts of the persulphate of mercury are sublimed with two parts of dried muriate of soda, is that of Kunkel; and in selecting so old a formula, we are surprised they did not prefer that of Berthollet, which consists merely in dissolving the red oxide of mercury in muriatic acid, which is effected without the extrication of any gas, whilst the resulting salt spontaneously crystallizes.

Calomelas sublimatum.—Great praise is due to the Dublin College, for having restored a name of so great antiquity, and so generally employed in medicine. The objections to the name Submurias hydrargyri were numerous, independent of the che-

mical falsity which it involves. No mistakes can originate from the employment of the term calomel; and even if it is to be discarded on chemical principles, let at least the terms adopted be expressive of the real nature of the compound. In the process now ordered, the persulphate of mercury ready formed is employed, instead of the formation of that salt being the first step of the process. The addition of the word sublimatum is necessary to distinguish from the next article, *Calomelas præcipitatum*, in the preparation of which no alteration, except in the substitution of *parts* for weight in the proportion of the components.

Hydrargyri cyanuretum.—This mercurial salt, now for the first time admitted into any British Pharmacopœia, is directed to be prepared in the following manner:

"℞ Ferri cyanureti partes sex,
Hydrargyri oxydi nitrici partes quinque,
Aquae distillatae partes quadraginta.

"Misceantur ferri cyanuretum et hydrargyri oxydum, tum aquae calefactae adjiciantur. Per semihoram, continua agitatione, ebulliat mistura, et per chartam bibulam coletur. Aqua calida distillata saepe lavetur residuum. Denique vaporent liquores colati, et refrigeratione fiant crystalli."

This cyanuret is chiefly intended for the preparation of Prussic acid; but we know from experience, that it is admirably adapted, when dissolved, in minute quantity, in the emulsion of bitter almonds, for a local application in impetiginous eruptions, and in acne punctata. The introduction of it into this work of the Dublin College will, we trust, make it more extensively known and used.

The eighth section treats of the preparations from plants, "PRÆPARATAE PLANTIS;" and is divided into twelve subsections.

In the first subsection, "OLEA EXPRESSA," and in the second "HERBARUM EXSICCATIO," no alteration has been made. The third, we are surprised to find entitled "OLEA ESSENTIALIA," when the oils of this description are uniformly termed "Olea volatilia" in the list of the Materia Medica. The only change in this subsection is the judicious rejection of the rectified oil of hartshorn. Among the distilled waters, "AQUÆ DISTILLATÆ," two new articles are introduced, one which has long held a place in the London Pharmacopœia, "*Aqua carui;*" the other, "*Aqua lauro-cerasi*," a very old remedy, now revived on the supposition that it may prove beneficial from the Prussic acid which it contains *. Among the "Ætherea" there is no change, except the introduction of the following notice, after the directions for the preparation of *nitrous spirit of æther.*

"Parari quoque potest spiritus aethereus nitrosus, gradatim addendo libram *mensurâ* spiritus rectificati, acidi nitrici uncias

* From its greater *permanency*, it is better adapted to practice than the pure Prussic Acid. See the excellent Dispensatory of Dr Duncan, 11th ed. p. 218.—EDIT.

duas, et apparatu idoneo lenem calorem adhibendo ut distillent unciae duodecim."

In the rectification of *alcohol*, the caustic potass is omitted, and the quantity of the pearl ashes increased two pounds. The mixture is also now ordered to be digested seven days instead of three, previous to being distilled. The specifick gravity is by this change lowered, and a purer spirit obtained.

Spiritus ammoniæ is now formed by simply dissolving, by the aid of moderate heat, three ounces and a half of the carbonate of ammonia in three pints of rectified spirit.

Spiritus armoraciæ compositus, now properly named, is directed to be prepared without the garden scurvygrass, which was certainly a useless ingredient.

The *spirit of cinnamon* is ordered to be prepared with the bark instead of the oil; and the *spirits of peppermint* and of *spearmint*, which are now adopted by the Dublin College, with the essential oils of the respective plants. The *spirit of nutmeg*, which is also introduced, is directed to be prepared according to the formula of the London Pharmacopœia. In the *compound tincture of aloes*, the saffron is rejected, and the digestion is directed to be fourteen days instead of seven, an alteration which extends to all the tinctures. *Tinture of balsam of Tolu* is ordered, the proportions one ounce of the balsam to a pint of rectified spirit. Another new tincture is that of capsicum, adopted from the London Pharmacopœia.

Tinctura seminum colchici, hitherto a stranger in the British Pharmacopœias, is directed to be prepared with two ounces of the seeds, and one pint of proof spirit.

The *tincture of conium* of the Edinburgh College, with double the proportion of cardamom seeds, and the following tinctures of the London College, viz. *tincture of hops*, the *compound tincture of rhubarb*, with the addition of cardamom seeds, and the compound tincture of camphor, under its old title *tinctura opii camphorata*, are now adopted; whilst the *tinctures of orange peel* and of *saffron* are rejected.

The following, which are altogether new, are thus directed to be prepared:

"TINCTURA NUCIS VOMICÆ.

"R. Fructus Strychni nucis Vomicæ rasi uncias duas,
Spiritus rectificati uncias octo.
Macera per dies septem; dein cola.

"TINCTURA PIPERIS CUBEBÆ.

R. Fructus Piperis Cubebæ, uncias quatuor,
Spiritus tenuioris libras duas;
Macera per dies quatuordecim, et cola.

Under the subsection "ACETA MEDICATA," we find the vinegar of Colchicum, *Acetum colchici* of the London College, adopted; and a new preparation;—

"ACETUM OPII.

℞ Opii *Turcici* uncias quatuor,
Aceti distillati libram.

"Teratur in pulpam opium cum aceti pauxillo, dein adjiciatur aceti quod reliquum est. Vase obturato maceretur mistura, sæpius agitanda, per dies septem. Effundatur liquor supernatans, denique coletur."

This is evidently a solution of acetate of morphia, combined with mucus, and other principles of the opium soluble in vinegar. We have had no experience of its medicinal power; but we are disposed to regard it as a useful addition to our preparations of opium.

Among the "VINA MEDICATA," whilst we find *Vinum opii* of the London College adopted, we are surprised that *Vinum colchici*, certainly the best preparation of this valuable drug, remains unnoticed. It may be argued, that the vinous solution is superfluous, as the tincture is adequate for every purpose; but, of the two preparations, the wine, in our opinion, is greatly to be preferred, seeing that the veratria, the principle on which the virtue of the drug depends, is an alkali, the solubility, and consequently the activity, of which is increased by its union with the acid which the wine contains. We do not recommend the formula of the London College, which we think objectionable, inasmuch as the recent bulb is ordered; but our experience has demonstrated to us the efficacy of vinum colchici, prepared with the dried bulb dug up in July, dried as recommended, and used in the proportion indicated in the formula, proposed by Dr A. T. Thomson, in the last edition of the London Dispensatory.

The "MELLITA" contain nothing new; but the CONFECTIONES are augmented by the adoption of *Confectio amygdalarum*, *Confectio opii* and *Confectio piperis nigri* of the London College. The following *syrups* have also been adopted, *Syrupus altheæ*, *Syrupus rhamni*, *Syrupus rosæ* and *Syrupus sarsaparillæ*, from the London College, and *Syrupus balsami tolutani* from the Edinburgh. As we consider the formula for *Syrupus papaveris somniferi* greatly improved, we subjoin it:

"R. Papaveris somniferi capsularum exsiccatarum et contusarum, demptis seminibus, uncias septemdecim,
Aquæ ferventis congios duos.

"Macera capsulas in aqua per horas viginti quatuor, tum balneo aquoso ad congium redige et fortiter exprime; liquorem colatum iterum redige ad libras duas, et adhuc ferventem cola. Sepone per horus duodecim ut fæces subsidant; tum liquorem defæcatum decoque ad libram, ut fiat syrupus."

Among the "SUCCI SPISSATI," the extract of wolfsbane, and

that of belladonna, are adopted with the more appropriate appellation, *Succus spissatus*. Among the "EXTRACTA," the *simple extract of colocynth*, the *extract of rhubarb*, *extract of sarsaparilla*, and *extract of stramonium*, of the London College are now admitted. On the contrary, the *resinous extract of red cinchona bark*, which was an exclusive preparation of the Dublin College, and *extract of valerian*, are rejected. *Extractum colocynthidis compositum* is now directed to be prepared with common hard soap and proof spirit, instead of Castile soap and water. A *fluid extract of sarsaparilla*, now introduced, is ordered to be thus prepared:

R. Radicis sarsaparillæ incisæ libram,
Aquæ *mensura* libras duodecim.

Coquantur simul per horam et effundatur liquor. Denuo adduntur aquæ *mensura* libræ duodecim, et repetantur coctio et effusio. E materie residua fortiter exprimatur liquor. Seponantur liquores commisti ut subsidant fæces; tum continua ebullitione vaporet mistura ad uncias triginta, et addantur spiritus rectificati unciæ duæ."

What is to be gained by this preparation, which could not be effected by a solution of the ordinary extract, we cannot conjecture.

We are much pleased to observe, that the following extract has at length found its way into a British Pharmacopœia, having witnessed the benefit derived from its use in paraplegia, in several instances:

EXTRACTUM NUCIS VOMICÆ.

℞. Nucis vomicæ rasæ uncias octo,
Spiritus tenuioris *mensura* libras duas.

Digere vase clauso per triduum, cola liquorem et quod residuum est prelo exprime; huic adjice spiritus tenuioris libram unam cum semisse; per triduum misturam digere, et residuum exprime. Liquores commistos, ad quartam partem distillatione consumpta, ad spissitudinem idoneam redige.

We would recommend the distillation to be carried nearly to dryness.

The ninth section is entitled "COMPOSITA," and contains five sub-divisions; in the first of which, "Pulveres," we find *Pulvis cretæ compositus*, *Pulvis cretæ compositus cum opio*, *Pulvis kino compositus*, and *Pulvis scammonii compositus*, of the London College, with *Pulvis jalapæ compositus* and *Pulvis salinus compositus* of the Edinburgh, adopted. We are much astonished to find the inert preparation *Pulvis cornu cervini usti*, still maintaining a place in this work. In the second subsection, "Pilulæ," several changes also appear. In the preparation of the *Pilulæ aloes cum myrrha*, the oil of caraway is rejected; and sulphate of potass is added in that of *Pilula colo-*

cynthidis composita. The squill pill with ginger, of the former Pharmacopœia, is rejected; and the following preparations of the London College adopted: *Pilulæ hydrargyri submuriatis composita*, which is named *Pilula calomelana composita*, *Pilula ferri composita*, *Pilula gambogiæ composita*, *Pilula Saponis cum opio* and *Pilula scillæ composita.* Among the "*Electuaria*," the only change is in the *Electuarium scammonii*, which is now directed to be prepared with bruised cloves, instead of oil of cloves; the proportion of ginger is reduced, and that of the scammony increased; and oil of caraway is also ordered in the new formula. The fourth subsection "UNGUENTA," contains an *ointment* of *Sulphuric acid*, an *ointment* of *Conium*, another of *Galls*, one of *Iodine*, one of *Hydriodate of potass*, an *ointment* of *Scrophularia nodosa* and one of *Tartar emetic*, which is thus ordered to be prepared:

℞ Antimonii et potassæ tartratis drachmam,
Adipis Suilli præparati unciam.
In pulverem subtilissimam salem tere, dein cum adipe misce."

The utility of this ointment has been lately fully demonstrated; but, prepared in the above manner, it frequently fails to produce the pustular eruption, which is expected from its application, although we have never observed it to fail, when half a drachm of lump sugar is added, as ordered in the formula recommended by Dr Jenner. The *Unguentum tutiæ* is rejected. The novelty among the "EMPLASTRA" is the adoption of *Emplastrum Ammoniaci*, and *Emplastrum opii* of the London and Edinburgh Colleges; and the introduction of a new plaster, under the name *Emplastrum belladonnæ*, prepared with one ounce of inspissated juice of belladonna, and two ounces of soap plaster. This is certainly a vuluable addition to the list of plasters, and will be found extremely serviceable in chronic rheumatic pains, and other local painful affections.

Section tenth comprehends all the extemporaneous preparations.

All the CATAPLASMATA, with the exception of that of mustard, are new to this Pharmacopœia. They are *Cataplasma aluminis*, better known by the name Coagulum aluminis; *C. Carbonis ligni*, formed by adding recently burnt charcoal, reduced to a subtile powder, to the common cataplasm; *Cataplasma Conii*, composed of an ounce of the dried leaves of conium, boiled in a pint and a half of water, and thickened with flour; *Cataplasma dauci* and *Cataplasma simplex.* Among the "DECOCTA," we find *Decoctum aloës compositum*, *Decoctum dulcamaræ*, *Decoctum papaveris*, *Decoctum quercus*, and *Decoctum senegæ*, transferred from the London Pharmacopœia; *Decoctum altheæ*, *Decoctum guaiaci compositum*, and *Decoctum mezerei*, from the Edinburgh; and the following new preparations of this

description, *Decoctum pyrolæ*, made by macerating for six hours an ounce of *Pyrola umbellata* in two pints of water, then taking out the pyrola, bruising it, and returning it to the liquor, which is to be reduced by evaporation, until it yield of expressed juice one pint. *Decoctum taraxaci*, made by boiling four ounces of the fresh herb and root of Leontodon *taraxacum* in two pints of water, till a pound only remain, which is to be expressed, and the liquor strained. Among the Enemata, are two new very useful preparations: *Enema opii*, made by mixing one drachm of opium, with six ounces of water. The directions here are not very explicit; for, as the opium requires much friction to mix it with the water, the words, " Tere optime et," should have preceded the word " Misce." *Enema terebinthinæ*, made by rubbing half an ounce of common turpentine with the yolk of an egg, and gradually adding ten ounces of water of a temperature not exceeding 100°. The Infusa contain fifteen formulæ of the London College, and in addition to the six old formulæ of this Pharmacopœia, the following new preparations have been added:

Infusum Buchu.

℞ Foliorum Diosmæ crenatæ semunciam,
Aquæ ferventis *mensura* semilibram.
Digere per horas quatuor et per linteum cola.

Infusum Menthæ simplex.

℞ Foliorum menthæ viridis siccatorum drachmas duas,
Aquæ ferventis quantum satis sit ut colentur
Mensura unciæ sex.

Infusum Sarsaparillæ compositum.

℞ Radicis sarsaparillæ, prius aqua frigidâ mundatæ et dein incisæ, unciam,
Aquæ calcis mensura libram.
Macera per horas duodecim in vase clauso subinde agitans, dein cola.

Among the " Linimenta" we find two novelties, *Linimentum Saponis cum opio vel Linimentum anodynum* of the Edinburgh College, and *Linimentum terebinthinæ* of the London. The Misturæ are increased by the addition of *Mistura ammoniaci* and *Mistura ferri composita* of the London College, and two new articles. Before noticing these, we may remark, that the formula, now entitled *Mistura amygdalarum*, is much improved, by the addition of two scruples of bitter almonds to the sweet almonds formerly ordered in the lac amygdalæ. The new articles are, *Mistura camphorae cum magnesia*, made by rubbing together twelve grains of camphor with half a drachm of carbonate of magnesia, and gradually adding six ounces of water; and *Mistura ferri aromatica*, the formula of which we subjoin.

℞ Pulveris Cinchonæ lancifoliæ in pulverem crassum redacti unciam,
Radicis colombæ concisæ drachmas tres,
Caryophylli aromatici contusi drachmas duas,
Limaturæ ferri semunciam.

Digere per dies tres vase clauso subinde agitans, cum aquæ Menthæ piperitidis quantum satis sit, ut colentur unciæ duodecim; dein adde,

Tincturæ cardamomi compositæ uncias tres,
Tincturæ aurantii drachmas tres."

We have had no experience of the medicinal efficacy of this mixture; but it displays a strange determination to make a process complicated and tedious. We are also surprised to find a preparation, which requires to be digested for three days, among the *extemporalia*! The MUCILAGINES contain nothing new.

The eleventh section contains seven preparations, under the head "MISCELLANEA," with a translation of which, as they are altogether new to it, we will conclude our analysis.

ACIDUM SULPHURICUM AROMATICUM. *Aromatic Sulphuric Acid.*

Take of rectified spirit *two pints*,
sulphuric acid (by weight) *six ounces*.

Add the acid gradually to the spirit; digest the mixture at a low heat, in a covered vessel, for three days; then add,

Of bruised cinnamon bark *an ounce and a half*,
bruised ginger *one ounce*.

Finally, digest the mixture in a covered vessel for six days, and filter it through paper placed in a glass funnel.

AQUA CHLORINII. *Water of Chlorine.*

Take of dried muriate of soda *one hundred parts*,
oxide of manganese *thirty parts*,
sulphuric acid *eighty-seven parts*,
water *one hundred and twenty-four parts*.

Add the acid gradually to the water, and when the mixture is cooled, pour it upon the muriate of soda, and the oxide of manganese reduced to a fine powder, accurately mixed, and put into a retort: then, in a proper apparatus, with a moderate heat, somewhat raised, let the elastic gas, extricated from the boiling mixture, pass through two hundred parts of distilled water; when the effervescence in the retort ceases, the process is finished.

Keep the water of chlorine well stopped in glass bottles, and in a dark place.

IODINII TINCTURA. *Tincture of Iodine.*

Take of iodine *two scruples*,
rectified spirit *one ounce*.

Mix and dissolve the iodine with the aid of heat.

Keep the mixture in a well stopped vessel.

POTASSÆ HYDRIODAS. *Hydriodate of Potass.*

Take of iodine *one part,*
sulphuret of iron in coarse powder *five parts,*
sulphuric acid *seven parts,*
distilled water *forty-eight parts,*
solution of carbonate of potass *a sufficient quantity,*
rectified spirit *six parts.*

Mix the iodine, by rubbing with sixteen parts of water, and put the mixture into a glass vessel. Pour the acid, previously diluted with thirty-two parts of water, upon the sulphuret put into a matrass, and having fitted a tube to the neck of the matrass, with the opposite extremity reaching to the bottom of the vessel containing the iodine and water, pass the extricated gas through the mixture, until the iodine totally disappear. Evaporate the filtered liquor at a higher temperature to an eighth part, and again filter it whilst it is hot. Then gradually add a quantity of the solution of potass, sufficient for saturating the acid, which is known to be effected by the cessation of the effervescence. Next expose the mixture to heat, until the saline residue become dry, and of a white colour; pour the spirit upon this, and dissolve by the aid of heat. Finally, evaporate to dryness the liquid poured off from the saline residue, and preserve the residue in a stopped vessel.

QUININÆ SULPHAS. *Sulphate of Quinina, (Quinia?)*

Take of cinchona *cordifolia* in coarse powder *four pounds,*
distilled water *eight pints,*
diluted sulphuric acid *two ounces.*

Mix, and in a proper vessel, at a higher temperature, digest for four hours, frequently stirring, and strain; treat again what remains of the bark, with an equal quantity of water, as at first, and strain: let this be repeated a third time. Mix the liquors together, and add to the mixture as much recently prepared quick-lime as will be sufficient to saturate the acid. Separate the precipitated powder by means of bibulous paper; and having added to it *three pints* of rectified spirit, frequently agitating, digest for six hours, and strain; again treat, in a similar manner, the residuary powder, with an equal quantity of rectified spirit. Let this part of the process be also repeated a third time. Evaporate in a water-bath, the spirituous solutions, mixed together, to dryness. Add gradually to the residuary matter, as much diluted sulphuric acid as will slightly acidulate the liquor; then evaporate, that, on cooling, crystals may be formed.

TINCTURA BUCHU. *Tincture of Buchu.*

Take of Diosma crenata *two ounces,*
proof spirit *one pint,*
Macerate for seven days, and filter.

TINCTURA ACETATIS FERRI CUM ALCOHOLE. *Alcoholic Tincture of Acetate of Iron.*

Take of sulphate of iron,
acetate of potass, *each one ounce,*
alcohol *two pints.*

Rub together the acetate of potass and the sulphate of iron in an

earthen ware mortar, until they coalesce into a soft mass; dry this in a moderate heat, and, as soon as it is cold, rub it with the alcohol. Let the mixture be put into a stopped phial, and digest for twenty-four hours, occasionally stirring; finally, pour off the clear tincture from the fæces, and preserve it in a well stopped bottle."

A table, shewing the quantity of iodine, opium, arsenic, antimony and mercury, in some preparations; two copious indexes, of new and changed names; and a general index, conclude the volume.

Opium historice, chemice atque pharmacologice investigatum. Per Christophorum Andr. Christen, M. D., &c. &c. (Continued from Vol. ii. No. iv. p. 376).

THE second part of Dr Christen's valuable work is entitled *Pharmacologia Opii;* and is divided into three sections; the first treating of the effect of opium on living animals; the second, of the medicinal properties of opium; and the third, of the various preparations and compositions of the drug.

Dr Christen justly regards the first of these subjects as the most difficult part of the task which he has undertaken, whether empirically or scientifically considered. He points out the difference of effect, produced by a moderate or an adequate, and an excessive dose, of opium. The former produces excitement, which is succeeded by debility; "the circulation is increased; the pulse becomes fuller and quicker; the heat of the body is augmented with diaphoresis and itching of the skin; there is cephalic epirrhoea; the respiration is affected often to dyspnoea; and the excitement is followed by an elevation of the mind and intellectual faculties." This state, however, is soon productive of the opposite condition of the body; "the pulse becoming small, weak and irregular; the senses less acute; languor, sleep, inebriety, stupor, follow, with diminished irritability; and thence the relief from pains, which opium effects." This state of the habit is followed by weariness, impeded motion, paralysis, dyspnoea; both the regular and the occasional evacuations are suppressed, "except the perspiration which is increased by the relaxation of the solids, and the augmented volume of the fluids; there is also a greater flow of milk into the breasts." An excessive dose produces the same symptoms, with greater rapidity; and if a very large dose be taken, the fatal result is so immediate, that the primary action is scarcely perceptible. When this is not the case, the pulse is full, slow, or very small and quick, with a sensation of chilliness, demonstrating exhaustion; this state is accompanied by "cephalic epirrhoea, cephalalgia, vertigo, delirium, and a desire to talk nonsense; lassitude; di-

minished sensibility; failing of the sight, hearing and touch; deep sleep, with horrible dreams, or phantasms, or stupefaction, as if apoplectic; great anxiety: spasm, convulsions, paralysis, tetanus; lethargy, and at length apoplectical, convulsive death.

Dr Christen having thus enumerated generally, the effects of opium, proceeds to examine the symptoms separately, quoting under each head, the authors in whose writings the effects of opium, upon the symptoms under consideration, have been particularly noticed. We do not mean to follow him closely in this part of his labour, which displays minute and laborious reading; but to notice a few of his quotations only, and such remarks as are peculiar to our author, and, consequently, may be less familiar to the majority of our readers. To those, however, who are interested in tracing the history of the opinions of the leaders of the profession respecting the effects of opium on the animal economy, we recommend, strongly, the perusal of those details with which the learned author has enriched his pages.

Dr Christen accords with the opinion, that opium thins the blood, and concludes the section which contains the authorities in favour of, and against, this opinion, by stating the following as his reason for supporting the side of the question which he maintains: "Opium ought, indeed, to attenuate and expand, because it augments the temperature of the body, and operates in the same manner as wine and ammonia."—P. 47.

Some curious facts are stated, in noticing the faculty of opium to augment the physical powers of the body, as well as to elevate those of the mind. "The couriers between Surat and Bombay travel stupified with opium, and run on half asleep, although their eyes are open," *(Dict. port. de Commerce*, iv. 60); "the Turkish couriers, when tired, renew their strength by means of opium, *(ib.);* "the Tartars, who traverse the Turkish empire in an astonishingly short space of time, carry with them opium only, in the form of wafers, inscribed with the words Masch Allah, which is improperly rendered '*verbum Dei*,' by our author, as the expression truly means the gift of God," *(Dallaway*, p. 100.) In noticing the power of opium to expand the intellectual powers, Dr Christen mentions the well known fact, that the celebrated author of the Brunonian system, in propounding his theory, "imaginem sui systematis vivacissimam," to his pupils, was in the habit of taking forty or fifty drops of laudanum in a glass of rum, both before and during his lecture. We recollect having heard the following fact mentioned by a very distinguished pupil of Brown, who, happening to call upon his preceptor, one morning at an early hour, was surprised, as he entered his study, to hear him in the act of giving this order to his daughter, "Eppy, my dear! gie me the moderate stimulus o' one hundred and fifty draps of laudanum in a glass o' whiskey." Our author does not appear to be aware

of the veil which time has drawn over the celebrity of this distinguished individual in this country.

To controvert the opinion of Willis and some other writers, that opium destroys virility, Dr Christen quotes Alpinus, Suar, Cleyer, and others, who state that this drug is employed as an aphrodisiac by the Japanese, the Chinese, the inhabitants of India, the Persians, the Egyptians, and the Turks. "Jahn relates that the Turkish women incite the men with opium, (*Mat. Med.* ii. 255.) Linnæus also mentions, that it is regarded as an aphrodisiac by the Turks, (*Amoen. Acad.* viii. 298.) Opio ingesto erigi mentulam observatum est: Turcæ ad Levenzinum 1664 contra comitem Lud. Souches pugnantes, opio exaltati, turpiter cæsi et octo mille numero occisi mentulas rigidas tulere, referente Dejean, (*in Eph. N. Cur. Dec.* i. *Anno*; 2. *obs.* 69, p. 127; *et Haller in Præl. ad Boerh.* iv. 519). Linnæus relates that it tumifies and erects the mammary papillæ." These effects of opium, however, as our author justly remarks, depend on the dose in which it is exhibited, for in large doses it undoubtedly enfeebles the sexual powers. That opium acts nearly in the same manner as ardent spirits, in causing inebriety and stupefaction, is too well known to admit of refutation; and in oriental countries, where the use of wine is forbidden, the expression "Thou hast eaten opium," is familiarly applied to a man who appears in a state of intoxication.

That opium, and even the odour of it, causes sleep, has been an established fact from the earliest period of its history; but it required more accurate observations to determine the fact, that it produces wakefulness instead of sleep, in certain habits and under particular circumstances. Riedlin is quoted as having remarked, nearly 140 years since, that a small dose of opium sometimes will produce sleep, when a larger dose prevents it. Van Swieten passed a wakeful jovial night from having eaten opium, (*Comm.* i. p. 818); and Zimmerman saw a woman, in whom opium produced wakefulness only, whilst she procured sleep by taking a concentrated infusion of coffee! This effect of opium has been noticed also by Willis, Geoffroy, Gorterus, and many other writers; and, therefore, our author concludes, that opium is only relatively somniferous.

Opium suppresses all the secretions, except that of sweat, which it generally promotes. Nicander (*Alexipharmacorum*, t. 15.) noticed that the sweat which flowed when opium was administered, often exhaled the odour of opium; and Dioscorides observed, that this odour extended itself over the whole body, (*l. b. c.* 17.) But our author justly remarks, that opium, unless it be combined with diaphoretics, is not always followed by perspiration. Thence the mixed opiates of the ancients, the Theriaca and Diascordium, were regarded as sudorifics; and,

on the same account, Sydenham exhibited opium on the fifth and sixth day in smallpox. Dr Christen, however, points out some facts, which are exceptions to the general rule, that "opium suppresses all the secretions." Thus, as Linnæus (*Amoen. Acad.* viii. 298.) asserted, the flow of milk is not impeded but augmented by opium; the secretion of the bile is also increased, although the excretion is diminished, (*Jahn.* ii. 207.); and "Spröegel remarked, that in animals feeding upon opium, the ductus choledochus was turged with bile, whilst the alvine evacuations, like those of individuals labouring under jaundice, were scarcely coloured." With regard to the alvine excretions, although in general opium confines the bowels, yet instances are on record, several of which are quoted by our author, which prove that it opens the bowels, under certain circumstances. In a similar manner, the urinary secretion is not always lessened by opium, when the excretion of that fluid from the bladder is impeded: thus, "Sprögel saw the urine retained during two days in dogs to whom two scruples of opium were given, and for three days in others, who took two drachms of the drug; and, on opening the animals at the time, he found the bladder filled with urine, and so distended, that it scarcely contracted when moistened with nitric acid; there was no deficiency of the function of the kidneys in secreting the urine, but a considerable defect in the excretory function of the bladder." P. 69.

Dr Christen next inquires into those circumstances which indicate and contraindicate the use of opium. It is indicated in spasms and pains; in depressed vitality from deficient cerebral action in the vascular system; in inordinate evacuations, either intestinal or vascular; and in cases of evacuations retained by spasm, as in obstructed menstruation, flatulent colic, and the like. On the contrary, it is contraindicated in cases of augmented vitality; for instance, in the purely phlogistic diathesis, plethora, and acute inflammatory fever, in which venesection is chiefly to be depended upon; in depressions of the nervous system approximating to paralysis, atonic state of the stomach and intestinal canal, indicated by a slow, weak, defective digestion, inactive bowels and scybala, in the crisis of disease, as it impedes the excretions, perspiration excepted; in the diarrhea of children during dentition; and finally, in cases of over excitement from acrid or stimulant substances pent up in the abdominal viscera, or other cavities of the body. Our author also quotes the opinion of Jahn, which, however, he conceives questionable, that opium is generally contraindicated in jaundice, in consequence of its tendency to produce a superabundance of carbon in the living animal body. P. 78.

Dr Christen enters minutely into the history of the use of

opium in the particular diseases to which it is applicable; and in this part of his work we will follow him as closely as the nature of the details permit.

1. In *intermittent fevers*, our author traces the use of opium to the time of Hippocrates, who prescribed it in quartans, in combination with hyoscyamus, mandragora, silphium, and trifolium; in which practice he was followed by Trallian and Galen, the latter of whom (*De Ratione Febres curandi*, c. 2. *et libro de Theriaca*, c. 15.), asserts that the paroxysm of a quartan is stopped by the theriaca. Among the moderns who have successfully combated intermittents with opium, Lind prescribed it in all cases free from inflammatory and gastric symptoms, particularly when the paroxysms were what were termed *subintrant*, so as not to allow sufficient time for the exhibition of cinchona. Hoffman was the first, however, who prescribed opium on rational principles, in " nervous intermittents," (*intermittentes nervosas*). He gave " ninety-five drops of liquid laudanum at once, by which he subdued every attack; even in soporose intermittents he prescribed fifty drops for a dose, with ten drops of ether, before the paroxysm, and the cinchona in the interval," p. 80. Berryat, in dangerous malignant intermittents, exhibited opium, conjoined with ether and musk. Brown, Weichard, Frank, Murray, and others, employed opium in common intermittents. Jahn gave it an hour or half an hour before the accession of the paroxysm, in an infusion of cinnamon, mixed with wine, and repeated it every hour until the commencement of the hot stage. Lind asserted, that it expedited the sweating stage, and procured sleep, when given every half hour during the hot stage, a practice which Cullen and Guarini approved. Lind's dose, which is not mentioned by our author, was twenty-five drops. Opium has been seldom administered in the intermission; but Jackson exhibited it in the American intermittent, " with serpentaria and antimonials, even with cinchona and iron, when the pulse was small and hard, or very small, and the skin either dry or covered with a clammy sweat;" but although it may mitigate and shorten the subsequent paroxysm, yet much caution is requisite in such cases. Storck apprehended obstruction, inflammation, and stupor from the use of opium; but, when nervous symptoms were present, he states, that, by the aid of it, he cured intermittents with one ounce of bark.

Dr Christen does not notice Fordyce's practice of uniting ipecacuana with opium in intermittents, nor does he offer any opinion of his own on the employment of opium in this genus of fever.

2. " In *gastric* and *inflammatory fever*, opium," our author judiciously remarks, " is not generally useful, until sufficient evacuations have been procured." Hopfengærtner, however,

found it serviceable in this fever, when the skin was dry and arid, and when cough and dyspnea were present. Dr Christen quotes, also, the opinion of the authors of the Commentary on the Pharmacopœia Austriaca, in favour of the use of opium in inflammatory fever, arising from suppressed perspiration.

3. In *typhus*, opium has been employed only by modern practitioners. "It may be useful," says Dr Christen, "when symptoms of increased cerebral sensibility shew themselves," and "a spastic state of the nervous system prevails." Even in a state of high delirium, after the bowels were freely opened, inflammation of the viscera being at the same time absent, Kortum gave, every third or fourth hour, half a grain of opium, either alone, or combined with ammonia or musk.

When, instead of stupor, there is a quickness of intellect, with loquacity, a vivid expression of the eyes, and alternate sadness and hilarity, which, on the eighth or ninth days, breaks out into open delirium, with a flushed face and suffusion of the eyes, Stiven recommends opium conjoined with tartar emetic. "Audacissimus Chisholm, in typho nervoso," exclaims our author, "cum magna irritatione et debilitate intra nychthemerum, opii grana viginti quatuor, et centum viginti calomelis, exhibuit!"—P. 85. In *low nervous fevers*, running on beyond forty days, attended with great debility and convulsions, Cullen recommended opium; and Jackson both exhibited and praised it as the principal remedy in *yellow fever*. When somnolescence, however, is present, stertorous breathing, stupefaction, muttering delirium ("delirium taciturnum"), colliquative sweat, insensibility, and a slow apoplectic pulse, it cannot be employed in these fevers. In *putrid gastric fevers*, Jahn regards opium as a useful remedy, towards the termination of the disease, if there is much debility, and the diarrhea prove obstinate; but he condemns it in the first stage of the disease, as tending to retain the putrid sordes, and, consequently, likely to augment the force of the disease. In *plague*, it is useful, while the vital powers continue unimpaired, and the pulse and respiration have suffered little; but, otherwise, it proves hurtful, as Willis observed (*Pharm.* p. 169). The authority of Huxham and Linnæus is quoted in its favour in putrid malignant fever. According to Voigtel, opium, in combination with camphor and musk, is requisite in scarlatina, variola, and other exanthemata, when they are accompanied with typhoid symptoms. Jahn, however, justly remarks, that it is injurious in typhus, when general inflammatory symptoms are present; although it may prove useful in asthenic fever conjoined with topical inflammation and pain.

4. "*Inflammations*," says our author, "have opened a vast field for the exercise of the powers of opium, and heaped much

splendour upon it." He regards Hamilton as having commenced the employment of opium in acute inflammations, after venesection and purging; and mentions his practice, which was "to give a bolus of five grains of calomel, and from a quarter of a grain to one grain of opium, every sixth or tenth hour, with plenty of mucilaginous fluids; under which treatment the attack often terminated safely in forty-eight hours. Sometimes, with the view of augmenting the diaphoresis, he added tartarized antimony and camphor; and, when the inflammatory symptoms were broken, he exhibited cinchona." P. 88. Hamilton treated *phrenitis* and *paraphrenitis* in this manner: and "Bell," says our author, "when there was much pain and great restlessness, administered a mixture of three parts of antimonial wine (Huxhami), and one part of tincture of opium." In children, with smallpox, Sydenham combated phrenitis with from eighteen to twenty-five drops of liquid laudanum, or from an ounce to one and a half of syrup of poppies. Opium, our author agrees with Jahn, is useful in phrenitis, even when pain is absent; but, according to Vogel, it is injurious in this disease, when it is accompanied with much griping, with a weak, small, tremulous pulse, diminished strength, twitching of the tendons, and great inquietude;—"but in a milder form of the disease, with the nervous system nevertheless excited, producing wakefulness and delirium, although the face be pallid, the pulse soft and composed, the eyes mild and the mind serene, he regards it as a valuable remedy." P. 90. In *inflammatory angina*, particularly when accompanied with nervous symptoms, opium, combined with mercurials, is the medicine, we are told, which is to be depended upon; and Heberden, Macqueen, Temple, and Elsner, are quoted by our author, as regarding opiates, as the only means of allaying the cough, pain and spasm, in Angina pectoris. Horn expatiates much on the utility of opium in *pneumonia;* but Dr Christen accords with the opinions of several authors, whom he quotes, that the inflammatory action must first be broken by venesection, depleting salts, and other antiphlogistic means. According to Jahn and Vogel, says our author, "if antiphlogistic means have been employed, and the pulse nevertheless continue cordy and small, the cough dry and tight, the sputa bloody, the respiration laborious, with pungent pains, the skin dry or covered with a clammy perspiration, and the urine watery, the chief reliance is to be placed on opium, particularly if combined with antimonials." P. 92. We have refrained from offering any critical remarks on the practice of the various authors quoted by Dr Christen; but, in the present instance, we cannot avoid remarking, that the antimonials are more likely to be productive of benefit than the opium; and that, if opium be admissible in pneumonia, before the inflammatory action be completely subdued, it can only be in com-

bination with calomel and tartarized antimony. In pneumonia, Haen exhibited one grain of opium in five or six ounces of olive oil. It proved salutary when the cough was lessened, sweat broke out, and the breathing became freer; but opium, as Cullen remarked, is hurtful when it is not productive of these symptoms. "Horn asserts that opium, given at first in small doses, is indicated in asthenic fever, accompanied with pectoral inflammation: he gave to an adult a quarter of a grain, every hour and a half, or from ten to thirty drops of a mixture composed of one part of Thebaic tincture, and three of Hoffman's anodyne mineral solution. Jahn exhibited, to the more delicate, opium combined with ipecacuana; and with mercury, to the more robust, in typhoid and rheumatic inflammation, if venesection abated neither the pain nor the fever. Hamilton exhibited, every sixth hour, five grains of calomel and one grain of opium."—P. 92.

In *gastritis* and *enteritis*, Dr Christen thinks that opium may be beneficially combined with mucilaginous matters, and praises Sydenham's method of exhibiting an opiate in the evening, and a purgative on the following morning. Vogel mixed the aqueous extract of opium with mucilages, honey and oils; Jahn employed the entire drug, and Hamilton joined it with camphor and mercurials. "Much certainly," says our author, "is to be expected from opium in enteritis, for diminishing the inflammatory pain and unusual sensibility."—P. 93. In *hepatitis*, after plentiful venesection and topical bleeding, the exhibition of opium suppresses the perpetual teazing cough, relieves the impeded respiration, and irritable state of the bowels: and, in *nephritis*, whether calculous, hysterical, or arising from retrocedent gout; and, likewise, in *cystitis* and *metritis*, it is eqnally useful after bloodletting.

With regard to the propriety of exhibiting opium in inflammation depending on extensive wounds, and the greater operations of surgery, much diversity of opinion has long existed. Richter, Millin, and others, recommend it to be given two hours before an operation, and at the same distance of time after one; and Bromfield regards opium as more useful than venesection in warding off inflammation in extensive wounds. When there are irritating matters in wounds, such as needles or small bones, or if tendons be wounded, it is especially useful; and it is beneficial some days even after the wound has been inflicted, if pain, anxiety, and restlessness be present, although there is neither topical nor general inflammatory symptoms. In some instances, however, instead of relieving, opium increases tension and anxiety, and occasionally causes metastases to some internal viscus. Erhard, who maintains this opinion, "supports," says our author, "from his own extensive experience, the value of the saying of the ferocious Brown, Opium mehercle non sedat!" p. 37.

Erysipelatous inflammation is often happily checked by opium, combined with camphor, antimonials, or ipecacuana. In *catarrhal inflammation* also, after the phlogosis has been diminished by venesection and blisters, it subdues the cough, promotes the expectoration, and encourages diaphoresis. In this case, it is properly combined with squill and antimonials.

In *ophthalmia*, says Dr Christen, the practice of employing opium in the manner of Ware, is as old as Dioscorides, who remarks, that "opium with roasted yoke of egg, is useful in inflammation of the eyes," (iv. 60, p. 745). Galen, however, inveighs against its use in collyria, conceiving that it weakened the eyes, and was injurious to the sight. As an internal remedy in this disease, it is recommended by Jahn, after the inflammatory symptoms have been reduced by bleeding, leeches, fomentations, and other antiphlogistic means; and the same author praises the following as a soothing emollient in inflammatory ophthalmia, originating from an external cause.

"℞ Infusi radicis Althaeae tenuis uncias tres,
(e radicis drachmis duabus cum aquae unciis tribus);
Opii puri grana duo.——Misce,
Exactissime terendo.
Sig. Adplicetur oculo tepide.

Dr Christen next notices the *vinum opii* employed by Ware, and gives the formula for its preparation. Ware found, that the simple vinous solution of opium was much less efficacious than that containing the aromatics, as ordered in the Pharmacopoeia Londinensis. Else diluted the common thebaic tincture with rose water, gradually augmenting its strength; and if the symptoms were not much benefited, he interposed topical bloodletting and purgatives, after which the solution of opium generally succeeded. In the *serous ophthalmia* of infants, Haar found that the best remedy was a bread poultice, made with four ounces of pure water, and two or three drachms of tincture of opium; accompanying this topical application with the internal exhibition of decoction of cinchona bark, and a gentle opiate at bedtime. At the same time he applied diluted ung. hydrarg. ex nitrico oxydo to the eyelids; and when symptoms of scrofula were present, he ordered a blister to the nape of the neck. We can vouch, from very extensive experience in this disease, for the propriety of this practice. In *psorophthalmia*, Conrad employed an ointment made with half a drachm of oxide of zinc, six grains of opium rubbed up with an ounce of ung. resinatum.; and in *inflammation of the palpebrae*, the same author recommends a collyrium, consisting of half a grain of muriate of mercury, half a drachm of opium, and six ounces of rose water.

Having detailed the use of opium in *staphyloma* and *procidentia uveæ*, Dr Christen proceeds to examine the authorities

for employing it in rheumatic affections. He first quotes the opinion of Dr Scudamore, in favour of the value of opium in *acute rheumatism*, when it is unaccompanied by much inflammatory fever, and when the remedy is not contraindicated by a confined state of bowels. " Sydenham, after two or three bleedings, exhibited a gentle cathartic in the morning, and a moderate dose of syrup of poppies, to check the vehemence of the disease, and to prevent the danger of a relapse. He remarked, also, that opiates were injurious in the height of the disease before venesection:" but Jahn asserts, that, when the pain is so great that the fever causes great anxiety, and suppression of perspiration, even although inflammation be present, large doses of opium are beneficial. Paulizky, who published many observations on the cure of rheumatism, *(Med. Prakt. Beob.; Samml.* 39. 11. *Samml.)* always exhibited opium, mixed with camphor, ipecacuana, and antimony. Jahn considers nothing so useful as opium in the decline of acute rheumatism; and recommends the combining it with a bitter or a diluted acid. Our own experience has afforded us many opportunities of remarking the powerful effects of opium, when combined with tartarized antimony and calomel, in acute rheumatism. We have seen few cases in which venesection was necessary; and immediately after clearing the bowels, have generally ordered the above combination, in the proportions of one grain of calomel, a quarter of a grain of tartar emetic, and two grains of opium, to be given every eight hours, until the pains are relieved; after which the cure is completed by the infusion of menyanthes trifoliata, or of cinchona, or by the sulphate of quinia. In the opinion of Jahn, says Dr Christen, *chronic*, or rather *continued rheumatism*, without inflammatory fever, is to be treated by tonics rather than by opium; except when the pains are very severe, and they return periodically at night, at which time he recommends it to be given. Fothergill, Lewis, and Scudamore, however, bear testimony in favour of opium, joined with tartarized antimony, in chronic rheumatism. *Wandering rheumatism*, we are informed, is best combated with opium, when the disease is produced by debility, and too sensitive a state of the system; in which case it may be given combined with camphor, musk, volatile tincture of guiac, or crude guiac, oil of cajeput, aconite, ipecacuana, antimonials and mercurials. Dr Christen concludes this part of his subject, by remarking, that Pringle treated sciatica as a disease of the nerve itself, resembling rheumatism; Fothergill cured it with a combination of calomel, antimonials, and opium; Kaauw Boerhaave, with a grain of opium, or opiate clysters, exhibited at night; ' Et opii,' in our author's words, ' usum in ischiatide a causa syphilitica plurimum laudavit primarius hoc super objecto auctor Cotunnius.' P. 106.

(To be continued.)

MEDICAL JURISPRUDENCE.

Medico-legal Report of an Exhumation, made three years after interment. By Dr Eugene Delmas. (From the Ephemerides Medicales de Montpellier, September 1826.)

A piedmontese, named Bonino, formerly a soldier, aged 46 years, had retired to a village near Montpellier. He disappeared in 1823, and a report spread that he had gone to Spain; but soon after it was whispered that he had been assassinated by a girl, with whom he lived, and a person named Diamont, who was known to have been long intimate with her, and who had married her nine months after the disappearance of Bonino. Two years passed away, however, after which, in 1826, the legal authorities being informed of the rumours spread abroad, caused a search, and a body was found in the garden of the suspected person. In the first place, it was necessary to ascertain if the body was that of Bonino, which could be recognized by one peculiar circumstance; namely, a sixth finger on the right hand, and a sixth toe on the left foot. I was charged with the examination of the affair, and the following report is the result. Diamont and his wife were tried and condemned by the Court of Assizes, at Montpellier, on the 26th August 1826.

On the 30th April 1826, at the request of the public administration, we went to the commune of Sussargues to proceed to the exhumation of a dead body discovered in a garden. The earth being removed, we found, at the depth of eighteen inches, a human skeleton lying on its back. The head placed towards the north was slightly bent forward; the lower jaw was separated from the upper. The arms were crossed upon the breast, so that the right passed a little over the left. The ribs still retaining the form of the thorax were separated from the sternum, which we found lying on the opposite vertebrae. Some black hair, and a metal button, were imbedded in a moist earthy matter, which covered the anterior surface of the sternum. The vertebral column unbroken, had retained its relations with the head and pelvis. The inferior extremities stretched out, and, on the same level as the trunk, followed the direction of the axis of the body, and inclined towards each other. The right foot, which alone we saw in its place, was still in the shoe, a little bent on the leg, and inclined to its outer edge; the left had been removed with the shoe, in which we found only a part of it.

The head, removed from its position, was dry in the frontal region, while the occipital region was still moist, and lubrified

by a fatty matter, amongst which, we found some black hair: attentively observed, it presented to us, at the right external orbitar angle, a deformity arising from an injury long anterior to death, since nature had produced a cure; we thought from this that there had been a cicatrix in this part. Another lesion of the bone existed on the left side of the coronal suture, but it appeared of ancient date. The left temporal bone, especially, fixed our attention; its squamous portion, almost separated from the parietal bone, was divided into three portions by three cracks, which proceeded from the circumference of the bone, and, before the external auditory canal, united to a fourth, which, turning round the base of the zygomatic process, terminated in the glenoid cavity. The form of this fracture, the soundness of the zygomatic arch, and mastoid process, induced us to suppose that it was made with a blunt instrument of a small size. From the absence of any apparent operation of nature to effect a cure, from the separation of the osseous pieces, and the oozing which took place through the different points of the fracture, we think that it had taken place at a time very near death. We add even, that the injuries we observed were the results of a violent blow, that must have brought on a cerebral commotion, which, without considering other accidents, would instantly deprive the individual of the use of his senses, and every means of defence.

The shoes in which we found the bones of the foot, some pieces of woollen cloth, surrounding the vertebrae of the neck, metal and wooden buttons, a knife, of which the blade was folded in the handle, and found at the left side of the breast, some fragments of cloth and velvet, all these inclined us to believe that the body had been buried, covered with a part, at least, of its clothes.

Although the time necessary for the complete decomposition of a dead body be very variable, and no exact rule can be established in respect to this, seeing that climate, moistness or dryness of soil, the greater or less depth of graves, circumstances relative to the state or temperament of individuals, all occasion much difference, we endeavoured, nevertheless, to determine how long the skeleton in question had been buried. The general opinion is, that, in a temperate climate, when no peculiar circumstance hastes on or delays decomposition, it is completed in three or four years. In comparing the state in which we found the parts at the time of exhumation, with what has been said on this subject, we think we may advance that the body has been buried about three years and a half. We indeed remarked what some authors point out as taking place in the third period that begins after the third year; namely, the entire disappearance of gaseous products, the fetid odour replaced by an odour of mouldiness, and merely a remains of earthy, fatty,

friable, brownish and black matter. The only soft parts which we found were vertebral ligaments, the composition of which from being more nearly of the nature of bone, ought to be the last to disappear.

As neither time nor place permitted an attentive examination of the other parts of the skeleton, we put all the bones that we could find into a bag, to which the legal seal was applied.

On the 5th of May, we went to the Judges' chamber, to continue the examination of the bones. We found all the vertebrae, the ribs and bones of the pelvis, which were soon articulated. Wishing to determine to what sex the skeleton belonged, we examined these different parts. By the width of the passages being small, compared to the depth of the pelvis, the outlet narrow, cordiform, and terminated in a point forwards, a formation that depends on the direction of the ischia, which, in their descent, converge much towards each other, by the oval and very elongated form of the obturator holes, we were induced to believe that it belonged to a man. We are confirmed in our opinion by the small separation of the descending rami of the pubis, which had their anterior face directed outwards, whilst in the female it is broad and flat. These circumstances were in relation with the length, the consistence, and developement of the bones.

The sex being known, we endeavoured to discover the man's age. The complete developement of the bones, that of the processes to which the muscles are attached, and also the jaws; the state of the teeth, the number of which was complete, with the exception of the fourth molar tooth of the right side of the upper jaw, which had been long out, as the alveolar cavity was ossified; and the adjoining teeth had not changed their direction, although they were not supported; these circumstances induced us to say that he had attained his fortieth year. According to the comparative table of Professor Sue, we determined that the height was about five feet five inches.

With the exception of some bones, the extremities were complete, and we articulated the right foot which we had preserved in the shoe. Two sesamoid bones, which are common enough, were the only additional ones that we found. The left foot having been removed in digging, some bones of it were lost. We found only the calcaneum, astragalus, scaphoid, and cuboid, the five metatarsal bones, and three phalanges: this prevented us from articulating it, and ascertaining if there was any thing peculiar. Having separately examined the bones that remained, we found the head of the fourth metatarsal rounded, extending outwards, and presenting a small articular surface, which might have been produced by an extra articulation; but not having seen in what manner this bone was articulated with the first phalanx, we could not determine if there had been a sixth toe attached to it.

Except some small bones of the carpus, we found all those of the right hand. The fifth bone of the right metacarpus at once attracted our attention; shorter and thicker than that of the other hand, its extremity towards the phalanx separated into two parts, one of which, truly articular, smooth, narrow, rounded and prominent, had the direction of the axis of the bone; whilst the other corresponding to the cubital edge, formed with it an angle of about eight degrees; not continued so far as the first, it was equally smooth, and presented an articular surface, which differed from it only in its less rounded form. Having tried to articulate the first phalanx of the little finger, it fitted exactly upon the first articular head, and presented upon the side corresponding to the second, a depression, the obliquity of which was in relation with the direction that we have assigned to this second surface. This examination of the different parts of the fifth finger, leaves no doubt of the nature of the anomaly which it presents: thus we think we may affirm, a sixth finger must necessarily have existed, although we did not find the bones that composed it. The left hand, of which we found all the bones, except some bones of the carpus, presented no peculiarity.

Such are the results which we obtained; they conduct us to the following conclusions:—

1*st*, The skeleton which we disinterred had been buried from three years to three years and a half, covered with its clothes.

2*d*, This skeleton belonged to a man about the age of forty to forty-five years, and of the height of five feet five inches.

3*d*, This man had six fingers on the right hand, the sixth should have been placed beside the little finger; and, if there existed an additional toe on the foot, which we cannot affirm, its place would be on the left foot, on the outside of the little toe.

4*th*, Death was occasioned by a violent blow given by a blunt instrument, which fractured the left temporal bone.

The value of anatomy, and the advantages derived from it every day by medicine generally, and especially by medical jurisprudence, cannot be denied. The fact just related is a new and remarkable proof of this. It was this science alone that produced evidence on the trial: by it the skeleton, reproduced with its deformities, placed the victim in presence of his assassins, and fully convinced their judges.

Great anomalies have been observed regarding supernumerary fingers; they have been sometimes seen supported by a sixth metacarpal bone, at other times resting on the fifth of these bones, or on the first phalanx of the little finger; sometimes also, but more rarely, affixed immediately to the radial edge. M. Boyer relates, that he has observed them forming a bifurcation upon the first phalanx of the thumb; and I have myself met with a fact of this nature. It has also been observed that

additional fingers are rarely found on both hands: thus, in some persons there may be on one hand a finger very complete, having its bones and muscles, that permit it to execute easy motions, whilst, on the other, an imperfect finger exists, but little developed, or perhaps only a mere appendage, that leaves no trace on the bone to which it adheres. The same anomalies exist with regard to additional toes.

The present case presents a new example of these aberrations of nature. Bonino had, on the right hand, a sixth finger, formed of one or several phalanges, and whose articulation with the fifth bone of the metacarpus presented a pretty large surface, but it was on the left foot that a sixth toe was found, although the articular surface of the fifth metatarsal bone was less evident than that of the fifth of the metacarpus. Upon the right foot and left hand, on the contrary, there was nothing; in reality, there might have existed an excrescence during life, but if so, it was not sufficiently developed for any traces of it to be recognized three years after death.

This fact seemed to me interesting, by the circumstances with which it was attended, as but few such are found in the annals of justice, and I thought it my duty to publish it. I do it with so much more confidence, as after having fulfilled, in this unfortunate affair, the so painful duties of a medical jurist, I had the good fortune to acquire, by the confession of the guilty persons, complete security of conscience, in the certainty that I had not been deceived.

Medical Provident Institution of Scotland. By one of the Editors.

WE again venture to introduce this valuable institution to the notice of our readers. We formerly did not hesitate to pronounce favourably upon the suitableness of the plan, which was new for Britain; and we regretted, at the period of its publication, that we had only the space of a few lines left us for remarks;—not that either then or now we felt any inclination to launch forth in commonplace remarks regarding the support that man derives from man, or the advantages of the social state; we leave these topicks to writers whose ambition leads them, and whose pursuits familiarize them, to this kind of writing. We had merely a few sober remarks to offer to the younger part of the profession who have found reason to prefer settling in their native land; and we hope we shall neither be deemed meddling or impertinent, if, without personal acquaintance, we take the liberty of directing their attention to their personal affairs. Advice is the privilege of grey hairs.

All men must die, and few men die without first becoming

sick, even independently of that last and fatal sickness which ends in death. But sickness, in the usual sense of the term, if not of long duration, is a sufferable calamity; it is nothing to those lingering forms of decay, which, in the shape of phthisis, palsy, fatuity, mania, lameness, chronick gout, or rheumatism, unfit men for action, and waste the energies of expiring life. For these there is a stated provision in most professions, except that *one* which should be best acquainted with the frequency of their occurrence. This anomaly is only to be accounted for by the high hopes and aspirations with which every individual commences the medical profession; and the crude extravagant ideas he and others entertain of the large profits made, and fortunes realized, by those of its members who are already well employed. Aspirants and the publick look at nothing but the number of times the carriages or horses of such persons are heard to clatter along the ways: they forget the long period this full occupation has been waited for,—the expensive habits,—the onerous establishment, which it almost necessarily induces; and they forget, above all, that, to enjoy this wished-for felicity, they must become the slaves of the community, and hazard, every hour, that health upon which its continuance solely depends. The medical practitioner derives little or no personal advantage from the march of intellect and science, of which the present age is justly proud. The division of labour—the substitution of industry for skill—the fostering impulse of capital—are to him impracticable principles, which may every day enrich the agriculturist, the manufacturer, the merchant, or the lawyer, sometimes also the divine, around him,—but which, in his own case, are utterly inapplicable. They can scarcely, by any sagacity, ever be made to put a guinea in his pocket, or to yield him one hour of ease. By advancing the wealth of the community they may indeed augment the frequency of his fees; but this is far more than compensated by the natural tendency of general wealth to overstock the liberal professions with candidates, who, in relation to him, are only so many rivals. The medical man must rely upon his health and his energies alone; and we care not how long this state of things continue, provided he does not overrate their permanency. We entreat him, however, both to speak out and to look about him. If he finds himself and his family absolutely secure against the chances of death, disease, or penury, we advise him to turn his spare money to account in any other way that seems proper; but, should he discover that this security is little better than imaginary, founded on extravagant hopes, and erroneous computation of the incomes of others in his circumstances,—that his health and fortunes are subject to the same vicissitudes as those of other men,—then, in fine, let him listen to the voice of an old friend, and deposit his mite in the Medical Provident Institution of Scotland.

PART II.

REVIEWS.

I. PRACTICE OF MEDICINE.

Maladies Nerveuses des Auteurs, rapporteés à l'Irritation de l'Encephale, des Nerfs Cerebro-Rachidiens et Splanchniques, avec ou sans Inflammation. Par J. G. Fourcade Prunet, Docteur en Medecine de la Faculté de Paris, Medecin adjoint du Ministre des Finances, Medecin du Bureau de Charité du Premier Arrondissement, Membre de plusieurs Societés de Medecine. 8vo, pp. 348. Paris, Delaunay, 1826.

Nervous Diseases of Authors, referred to Irritation of the Encephalon, and the Cerebro-Spinal Nerves, with or without Inflammation. By J. G. Fourcade Prunet, M. D. Physician in Ordinary to the Minister of Finance, &c. &c. 8vo. 348 pages. Paris, Delaunay, 1826.

THE object of the work of M. Prunet is sufficiently indicated by the title. It is an attempt to refer most of the diseases of the human frame, and which he has chosen to denominate "nervous diseases of authors," to irritation or inflammation of the organs concerned, as superinduced by nervous irritation. We are well aware, that generalizing efforts of the present description, commonly owe much of their merit to the employment of ambiguous terms in an unusual sense, and the dexterous translation of old facts into new language, and we are so far from being much taken with such unprofitable labour, that the mere mention of the physiological doctrine, or of the name of Broussais, has more than once prevented us from dipping into a volume which seemed to invite our eye. We should not, therefore, obtrude productions of the present description upon our readers, did we not

frequently observe useful practical hints disseminated in their pages; and when we recollect, that the opinions of much wilder sectaries than the followers of Broussais,—the dreams of the Alchemists, Rosicrucians, and Paracelsians, have each led to some of the most useful discoveries in medicine, it is the part of the philosophical physician to make the most of their observations, which, after all, run no hazard of being much more deeply coloured by their prejudices than by his own. For, whenever a considerable number of the members of a learned profession, individuals of respectable talent, and honourable character, become warm supporters of a peculiar doctrine, one of three things has happened; or, it may be, all the three things have conspired to the production of this one effect. Either the evidence upon which the orthodox belief opposed to the new doctrine rests is deficient, false, obscure, unintelligible; or the new sectary is led by some extraordinary personal influence in the address, oratory, or delusive representation of his teacher; or, in the last place, the new theory is TRUE. Time always dissipates the illusion of the teacher, and distance, private interest, and personal vanity, accomplish the same in most persons, without any aid from the lapse of time; so that, in ordinary cases, in all disputed doctrines of this kind, we may safely infer that there are, on both sides, a great many obscure vague ideas mixed up with the truth. Observations, then, from all sides, are a mixture of simple fact and doubtful theory, and are only so much the more valuable, as the latter are more sparingly combined. It is under this view, that, since the commencement of our journal, we have constantly kept our eye upon what are called, in a harsher language, "The pseudo-sciences,"—Animal Magnetism,—Broussaism,—Phrenology,—Physiognomy,—if ever the lucubrations of their professors seemed, in any sort, to promise light to the dark and painful ways of the physician.

Dr Prunet, in a preliminary discourse of twenty pages, treats briefly of *Sensibility*, the *Sympathies*, and the *Temperaments*, in the modified language of Broussais. He then proceeds to divide the body of the work into three parts. 1. The *Neuroses* of nerves of relation; that is, of the cerebro-spinal nerves. 2. *Neuroses* of the brain and spinal marrow. 3. *Neuroses* of the visceral or sympathetick nerves. We may pursue the same division in our analysis.

The only peculiarities in the *new* doctrines of sympathies is the extensive influence assigned to them in the propagation of disease, and the course assigned to their reflection from the brain; namely, along the *sympathetick trunk* to the viscera, and general tissues.

The temperaments, according to our author, and his authority Broussais, may be arranged as follows.

" The *gastric* temperament, characterized by the predominance of the first assimilation ; if, at the same time, hypertrophy of the liver is present, it constitutes

" The *Bilious* temperament.

" The *Sanguine* temperament is distinguished by the presence of *haematosis,* or vascular plethora, mostly united to hypertrophy of the lungs, heart, and vascular system.

" The *Lymphatico-sanguine* temperament, proper to infancy.

" The *Anaemial* temperament, with deficiency of assimilation and vascular fulness.

" The *Nervous* temperament, innate or acquired, which may be combined with any of the others, but especially with the bilious, sanguine, or bloodless."—P. 21.

It is necessary to understand these terms in the author's own acceptation ; and the intelligent reader will at once detect in them the germ of the new doctrine of the temperaments, promulgated by Dr Thomas of Trois Vevres, and hastily sketched in our last. The *cranial* temperament of Thomas is the nervous of Prunet ; the *thoracic* corresponds to the sanguine of the latter ; and the bilious and gastric, commemorated above, are represented by the *abdominal* temperament of M. Thomas. Still it was a fine idea of the latter to connect the predominating propensity or faculty with the predominating organ.

" Neuroses in general.—Visceral neuroses depend, in general ; upon an unsuspected inflammation of the brain and viscera. Idiopathic neuroses of the nerves of relation, of which the seat is in the expansions or nervous filaments, are also preceded by phlegmasiae, when inflammation, by softening the tissues, *has exalted the sensibility,* to the point of developing neuralgia, convulsive motions or paralysis ; *(and in doing so)* has augmented, diminished, or abolished the irritability of the vascular nervous expansions, which effect sensation."—P. 25. " But irritation does not always rise to the point of inflammation. In the nerves of animal life, in the encephalon and viscera, it sometimes developes an excitation purely nervous, and morbid phenomena, which constitute true neuroses ; but it cannot be too frequently repeated, that these nervous diseases are immediately followed by phlegmasiae. It is not the affection of the nerves which endangers the life of the patient, provided it does not impede respiration or circulation, it is the consecutive phlegmasiae against which the physician ought to direct the therapeutic means, the most proper to arrest their developement, and to prevent their result."—P. 26.

Having seen the principle upon which Dr Prunet conceives the nervous irritation of authors to terminate in disease, we shall proceed to the first of his three main divisions,—The Neuroses of Animal Life. Under this head he comprehends Hyperesthesis of the retina, Nyctalopia, Diplopia, Hemeralopia, Amaurosis, Otalgia, Paracusis, Tinnitus, Dysecoea, Neuroses of taste and

touch, Idiopathic neuroses of the locomotive nervous system, Neuralgia.

The case below is interesting, and affords an illustration of our author's views.

"A distinguished advocate of the Parisian bar, M. C. de V * * *, after being engaged in a long and fatiguing labour, experienced, at first, an extreme sensibility in both eyes. Some time afterwards, and in succession to venereal excess, he perceived upon waking, that he saw objects double, *and placed one above another*. The examination of the eye led us to recognize a vehement contraction of the two pupils, but an unequal contraction: the left was more dilated than the right. In shutting the eye, the illusion was dissipated, but the sensibility remained the same. A bleeding, followed by the application of a blister to the nape of the neck, and the removal of all causes of excitement, discussed these alarming symptoms in a few months. The excessive sensibility of the retina, when it is not succeeded by inflammation of the irritated organs or of the brain, but resists the means of art, produces all at once, or by insensible degrees, an opposite state, that is to say, the *loss* of sensibility, or asthenia of the nervous apparatus of the eye."—P. 35.

"Acupuncture has been used in catalepsy, with complete success, by M. Sarlandiere, at Montaign."—P. 68. It is recommended in the neuroses of the skin, anaesthesia, &c. by our author. "Neuralgia is established in the class of inflammatory affections, without all doubt, by the labours of Beclard and Broussais."—P. 78. The internal treatment is antiphlogistic. A pill composed of equal parts of oxide of zinc, hyoscyamus, and the root of wild valerian, is mentioned, but not with much praise, as a remedy in neuralgia. The oil of turpentine, employed by M. Recamier, is spoken of more favourably. Dr Prunet mentions bark, and a crowd of other remedies, but thinks them all primarily hurtful, though they may have been useful occasionally, by exalting the action of the emunctories of the system. He seems to know nothing of the use of iron in this disease, or of the views of its origin, taken in this country, and all but demonstrated by the efficacy of tonics in relieving the complaint.

The second part, Neuroses of the Brain, treats of headach, convulsions, tetanus, chorea, epilepsy, catalepsy, *neuropathia*, mental alienation, apoplexy, palsy, hydrophobia. Headach, Dr Prunet attributes to "slight inflammation of the brain, or its membranes:" but the only proof we see offered of this hypothesis of a very ill understood affection, is the following:

"We have seen two young persons subject to periodical hemicrania from gastric irritation, in whom the pupil corresponding to the side of the cranium affected, presented a degree of dilatation much more considerable than that of the opposite side."—P. 103.

It has lately been demonstrated, that the modifications of the pupil depend chiefly upon those branches of the fifth pair which proceed to the retina: consequently the changes proceeded from within in these two cases. But does it follow, that every other variety of this multiform disease, acknowledges the same origin? Or, will the total relief of the pain and vertigo, often obtained by pressing the integuments upon the cranium, receive any explanation from Dr Prunet's theory? We are afraid the answer must be negative. Tetanus, in all its forms, is, with our author, an inflammation of the brain and spinal marrow, determined by local irritation, of these parts, of the digestive organs, or of the extremities of the nerves. Order of treatment,—bleeding general, local; opiates, in proportion to the susceptibility; cold sponging succeeded by wrapping the patient up in cloths, and giving him warm draughts for the purpose of inducing *diaphoresis.* "A sailor affected with traumatic tetanus, was shut up in the hold of the Royal Barge, la Seine, commanded by M. de la Perouse. Four hours in this hot and humid situation, with the hatches shut, was sufficient to excite, in that individual, a perspiration so abundant, that, on going down, in order to bring him out, he was found entirely cured."—P. 127.

Chorea is the result of a slight but direct irritation of the brain; the *secondary* and sympathetic *effect* of irritation of the digestive organs reacting upon the encephalon,—P. 129. Treatment,—local bleeding from the neck, temples, behind the ears; foot baths, sinapisms, exercise, light diet, warm bath; *cure of the primitive irritation,*—Ibid.

Neuropathy is a certain morbid exaltation of the feelings, sentiments, and animal sensations. When combined with gastrick or visceral irritation, it may be termed hypochondriasis; without these symptoms it might be supposed to approach melancholia or mania, but is neither. We think medical science indebted to M. Broussais for pointing out the distinctions between them. That there is such a state as neuropathy, independent of visceral disease, every man must have felt to whom it has happened to be the subject of lively joy, or of profound but gratifying mental labour. The exaggeration of feeling, and of memory, and imagination, also, which follows, is often produced in short necked persons during an increase of the circulation; in parturient women, in the drunk, or angry. Resolute water drinkers are often thus affected by the mere hilarity of more jovial companions; and the yawn, the laugh, the cough, and other spasmodick actions, commonly attributed to *imitation,* are in reality forms of neuropathy. But it has its depressed as well as its excited forms; THOUGH EXAGGERATION IS ITS ESSENCE.

We ourselves have at this moment a patient who would, in common language, be called hypochondriack, though he betrays no other symptoms of disease or weakness than those of pure

old age. His feelings, mental and corporeal, are *dull;* and his sole hallucination is regarding the temperature of his legs, which, though presenting nothing remarkable to the touch of others, he considers peculiarly cold. The theory which he has framed of the origin of this affection is a very plausible one, such as would nothing surprise us if met with in a medical work. Yet this very stupid man, whose sensorial energies are probably neither increased nor diminished since the day he arrived at maturity, must, by the prevailing nomenclature, be arranged under the same genus with the poet, the mechanician, the philosopher, —with Rousseau himself!

"J. J. Rousseau, that great, that good man, whose memory, outraged by prejudice, folly, or ignorance, will ever be cherished by those who can feel, possessed from his youth an excessive sensibility. During his early years he was tormented with constant ringing of the ears, and a slight irritation of the heart. He read books of medicine, conceived himself affected with aneurism, and travelled to Montpellier for the purpose of consulting the physicians. He returned as ill as he had set out, bidding an eternal adieu to the world; but immediately afterwards he rushed forward into the career of letters. Encouraged at first, he afterwards found himself become, all at once, the object of intrigue, of most of the literary men of that period. Deceived in his affections, afflicted by his own misery, and withdrawn from his illusions, the irritability of the brain gradually augmented; and thus, at the moment when he was suffering accessions of the darkest melancholy, during which his eloquent pen exaggerates, in his reveries, the wrongs of his enemies, —'My persecutors,' he says, 'have made such arduous exertions to carry the measure of my miseries to its height, that all human power, though aided by all the artifices of hell, could add nothing to their effect. Physical pain itself, instead of increasing my sufferings, would divert and lessen them. Whilst they extorted from me cries, perhaps they would spare me groans; and the laceration of my body might suspend the tortures of my heart.' This excessive irritability constantly increased till the end of his life, which was extinguished in an apoplectick fit."—P. 146.

Dr Prunet protests against nux vomica in palsy. It acts upon the brain, and aggravates the disease; and is in general relinquished by sensible practitioners,—P. 180. Hydrophobia is mere inflammation of the mucous membrane of the pharynx.

The third part of our author's work concerns the Irritations of the Visceral Nerves, including, of course, almost all the visceral nervous diseases; but the views of the school to which he belongs have been so often laid before the publick on those affections, that we despair of being able to extract much from this division that would interest the reader. So little is understood of the nature or office of the great sympathetick, that studies of this kind ought as much as possible to be encouraged; although,

notwithstanding this favourable disposition towards the subject, we must add, that the field of discovery is still unoccupied. We leave our author to the reader, with the praise of being distinct, pertinent, and allowing himself to wander into no very extravagant assumptions in support of the new doctrine. As sects expand, their sectaries become more rational.

A Physiological Enquiry respecting the action of Moxa, and its utility in inveterate cases of Sciatica, Lumbago, Paraplegia, Epilepsy, and some other painful, Paralytic and Spasmodic Diseases of the Nerves and Muscles. By William Wallace. M. R. I. A. &c. &c. Surgeon to the Charitable Infirmary of Dublin, and to the Infirmary for the Treatment of Rheumatism and Cutaneous Diseases in that city, Lecturer on Semeiology and Clinical Surgery, 8vo, pp. 148. Dublin, Hodges and Macarthur, and W. Currie and Company 1827.

"But now I am treating of outward applications; I must say something of a certain *Indian* moss, entitled *moxa*, which is highly esteemed of late in the cure of the *gout*, the manner of using it being to burn slightly the part affected with it. Now, though this remedy is said to come from the *East Indies*, and to have been unknown to the *Europeans* till of late years, it will nevertheless appear to be of more antient date with us, by consulting the writings of *Hippocrates*, compiled above two thousand years since. For treating of the *Sciatica*, he advises, "*If the pain be fixt in any one part, and does not yield to medicines, in whatever part it be, to burn it with raw flax;*" and a little farther, speaking of the *gout* in the feet, he says, "*The same things are proper here, that do service in the* gout *of the joints; and indeed this is a long and painful, but not a mortal disease: if the pain, however, continue in the fingers, burn the veins above the joints with raw flax.*" Now, I imagine that no body can think there is such a specific difference between the flame of burning *flax*, and that of *Indian moss*, as to render the latter more effectual in the cure of the *gout* than the former; any more than he can suppose that a fire made with oak billets can do more than another made of ash. This burning of the part affected bids fair to ease the pain, and may sometimes effect it; the most subtle and spirituous part of the morbific matter deposited in the part being by this means expelled. But the relief hereby obtained must needs be short, because it does not reach the indigestion, which is the antecedent cause of the *gout*; and it may seem needless to observe, that it is to be used only in the beginning of this disease. For when the *gout*, either by reason of its long continuance, or from wrong management, retreats to the internal parts, which sometimes

happens, and, instead of pain, causes sickness, gripings, and abundance of the like symptoms, no judicious person will be for using fire."—*T. Sydenham, Treatise on the Gout*, p. 460, 461. (Shaw's Transl.)

The above passage we have always considered a complete answer to those who speak of curing rheumatism or gout by means of moxa; but the point *conceded*, in the same argument of the English Hippocrates, that it may act topically, is to be considered as strongly in favour of those who, like Baron Larrey, (to whom Mr W.'s book is dedicated), and Mr Wallace, consider it an inestimable remedy in the forms of those affections which are strictly local. The title of our author's book sufficiently indicates the diseases wherein he chiefly relies on its efficacy, of all of which he relates cases eminently successful. The subject, however, is too familiar to admit of being farther noticed here; but, as Mr Wallace considers his new theory of the action of moxa, as the kernel of his work, we shall endeavour to present it to the reader.

The view taken by Mr Wallace seems substantially to be this. Heat produces contraction of the capillary vessels of a part, and increases their tone or vigour. And this action is not confined to the surface, but penetrates to a considerable depth. It is also propagated along the skin to a considerable distance by continuity of tissue.—" Besides, the eschar of the moxa is generally found to extend to the subcutaneous cellular tissue; and, De Haen and Pouteau have related cases, in which fatal *inflammation of the brain* was produced merely by the incautious application of the actual cautery to the head." Moxa, therefore, is not a simple vesicatory as vulgarly supposed; but a tonic and constricting power, which penetrates deeply into the regions to which it is applied, and induces a healthy active state of their capillary vessels, every where within the sphere of its action. Nay, so far from being merely vesicant, Mr Wallace proves, that moxa is most efficient when it does not blister the skin at all. Mr Wallace extends the depth to which it penetrates, through the medium of a needle he describes. (See Pl. IV.)

The arguments in favour of this view occupy two sections of our author's work; but they may, perhaps, be made intelligible in an abbreviated form. From four experiments of Dr Wilson Philip, and our valuable correspondent Dr Hastings, Mr Wallace demonstrates, that to *constrict* the capillaries of a part, is *one effect* of caloric applied to it.

From two experiments of his own he proves, that, when moxa was applied over a part inflamed, (an ulcer, and an ophthalmic eye), " when the moxa was burned out, *a diminution in the size of the capillaries was evident, and this diminution was more remarkable, when the ulcer was examined the following morning.*"—P. 34. The same was the event in the ophthalmic case; and the eye, in both experiments, was aided by a lens.

That this influence of the moxa, or, in other words, of caloric, is extended, to a certain distance, through the capillaries of the skin, he thinks, demonstrated, (1.) by the eschar generally reaching to below the true skin; (2.) by the cases of inflammation of the brain, induced by cautery of the scalp, as given in the Oeuvres Post. Vol. ii. p. 44. of Pouteau, and the Ratio Medendi of De Haen, vol. ii. p. 195; and, lastly, by several experiments, in which he proves, that the influence of caloric reaches deep, and continues long, when applied to a given surface. For example,

"I introduced one of my lower limbs into a fumigating apparatus at the Skin Infirmary, the apparatus having been previously heated to the temperature of 120 Fahr. On taking my leg out, after it had been inclosed in the apparatus twenty minutes, its surface was red, covered with moisture, and its temperature four degrees higher than that of the opposite limb. I now went into a cold bath, temperature 56 Fahr. Having remained in it for ten minutes, I found the temperature of my lower limbs, on coming out of the bath, exactly alike, and four degrees lower than they were prior to introducing my left limb into the fumigating apparatus. I now remained quiet for half an hour; and, upon examining the temperature of my lower limbs, I found the limb which had been in the fumigating apparatus had acquired its natural heat, but that the heat of the opposite limb was yet two degrees lower than natural; and it did not recover its full temperature for several hours." —p. 37.

He thinks that moxa also rouses the absorbents, and gives a case in proof:

"A child had been many weeks in the Charitable Infirmary, on account of a very extensive burning, produced by its clothes taking flame, while it attempted to drink from a kettle which was sitting on the fire. The granulations of the ulcers, which had resulted, were latterly very large, soft, pale, much disposed to bleed; and, with all the care of the dresser, could not be kept down by the ordinary means of treatment. When an ulcer, which was on the breast, was in the state described, I burned a moxa over it, at such a distance as to excite the feeling of pain, without producing any disorganization. On the following morning the effect was most remarkable; the granulations of the part, and beyond the part, to which the moxa was applied, were sunk below the level of the surrounding skin, and might be almost said to form a little well which lodged the matter. This experiment I repeated on other parts of the ulcer, and for several days in succession, and always with the same result.

"The relations which exist between the action of those medicines which are called local tonics or astringents, and those which are capable of exciting absorption, were noticed in a particular manner by Darwin; who, conceiving that the influence of the former could be best explained by their action on the absorbent system, has classed them under the head Sorbentia. If this opinion of Darwin have any foun-

dation, which I think it has, it will afford an additional reason for expecting that those agents, which excite the capillary circulation to increase of action, will also excite the absorbents to a similar state; and, by parity of reasoning, we may conclude that those agents, which are capable of exciting the absorbents, will have a similar effect on the capillary circulation. Thus, digitalis, mercury, &c. &c. may have a double influence in some diseases; acting directly on the function of absorption, and indirectly on the capillary circulation; and have we not daily proofs of both modes of action in their powerful influence over certain forms of inflammation?"—P. 45, 46.

The practical part of Mr Wallace's views, with regard to the application of moxa, and its combination with acupuncture, we cannot give better than in his own words:

"It is not necessary to inform my reader, that caloric is the only agent evolved, during the combustion of these various substances, from which any therapeutic influence can he expected. We should select a substance, whose combustion will take place slowly but steadily. If the combustion be too quick, the effects will be transitory; and, if too slow, it will require the use of the blowpipe, which complicates the operation, and unnecessarily alarms the patient. I have been fortunate enough to discover a mode of forming moxa, which is free from both objections; it burns slowly, but steadily, with the assistance of the blowpipe, if we please, without any sparks, without the least trouble to the surgeon, and without alarm to the patient, for its combustion is scarcely observable. It is formed by immersing either surgeon's lint or fine linen, in a filtered solution of chlorate of potash; the solution being made by dissolving one drachm of the salt in four ounces of distilled water. When the moxa is to be used of a small size, fine linen will answer best; but when of a large size, lint is to be preferred. Care must be taken that the substance used shall be perfectly dry, before it be folded up; and, in folding it, a proper degree of firmness must be given, which experience will soon teach. After the substance has been rolled up, and fastened with two or three stitches of the needle, its end should be cut with a very sharp knife, to make it perfectly level, and thus secure its application to every part of the skin upon which it is placed. Its length should be about three-fourths of an inch, and its diameter may vary from one quarter of an inch to an inch.

"The instruments which I use in applying the moxa are of the most simple kind: a porte aiguille, which I have invented (See Plate), or a pair of dressing or artery forceps, furnished with a screw at about three-fourths of an inch distant from their point, which screw serves to press the blades of the forceps very tightly together;—a bit of small, flat, silver wire, about three inches in length;—a bit of card paper;—a blowpipe;—and a small glass tube, are all that are required. With the silver wire a small hoop is formed to grasp the moxa, the size of the hoop being made to vary according to the size of the moxa; and the ends of the hoop are grasped in the forceps, which are made tight on it, by the screw with which they are furnished. The hoop should be applied about a line distant from that end of the moxa which is to be

placed on the skin; for the purpose of preventing any inconvenience from the hot wire coming in contact with the surface. In fixing the ends of the hoop in the forceps, such an angle or inclination of the moxa with the forceps should be given, as will be found most convenient for the exact application of the moxa to the part affected."---P. 67, 68.

"The size of the moxa, the manner in which it should be applied, and the length of time it should be allowed to remain on the part, are points of some importance. All these circumstances must be regulated by the depth of the disease, and the nature of the parts, to which we wish to apply it. It may be used, so as not to cause any injury of texture; in a greater degree, so as to produce vesication; and, in a still greater degree, an eschar; and the eschar may be either deep or superficial; and, lastly, it may be employed in conjunction with the acupuncture needle. These different modes of using the moxa may be distinguished by the terms, *first*, *second*, *third*, *fourth* and *fifth* forms of application.

"The first form of application will answer when the disease is very superficial. It constitutes the objective cautery of the French writers, and is highly extolled by *Fabri* in the Memoires de l'Academie Royale de Chirurgie, tome 15. 12mo, as a powerful remedy for the cure of ulcers. It may be serviceable in neuralgia, when the nerve is very superficial; or in affections of the joints, when the synovial membrane is immediately under integuments, as is the case in the knee and wrist. When used, it should be repeated at least once a day, and applied by holding the moxa in the forceps, as close to the part as the patient can comfortably bear; at the same time it should be moved slowly over the surface, backwards and forwards, until its combustion has terminated.

"I seldom have recourse to the second form of application, because it is not so effectual as the third, and it is more troublesome in its after treatment. It may, however, be usefully employed in tic douloureux, and to those parts on which the patient would not wish a cicatrix to be formed. In such cases, the moxa is applied by holding it steadily, and as close as possible to the skin, without allowing it to touch it, and until the skin appears white; which appearance is owing to the detachment of the cuticle, and the formation of a blister.

"In a large proportion of cases the superficial eschar will be the best form of application. To produce this eschar, the moxa must be placed on the skin, and allowed to remain on, until the skin appears brown under it; which will, in general, be found to take place, when the combustion of the moxa has extended to the distance of about a line from the skin.

"The deep eschar will be required, when the seat of the disease is far removed from the surface, as in affections of the spinal marrow and of the hip. To form this eschar, the moxa must be allowed to remain on until its combustion is complete; when the part upon which it was seated will be found black, and the surrounding skin slightly red and wrinkled. In this form of application, it will be sometimes useful to

increase the intensity of the heat by the employment of the blowpipe; and, when this is thought prudent, the moxa should be, previously to its application, surrounded by a cylinder of card paper, which will have the effect of directing a current of heat downwards, and prevent its escape laterally.

"When our object is to obtain any of the effects last described, it will be advisable, previous to the application of the moxa, to mark the spot on which we may wish to place it, with a little circle of ink; and, in case of using the blowpipe, we should cover the surrounding parts with a piece of paper, leaving a hole in its centre for the moxa; the paper having been previously wet in a saturated solution of the sulphate of alum, or muriate of soda, and afterwards dried. These solutions lessen so much the combustibility of the paper, that it will prevent it from taking fire, in case a spark should be given off by the blowpipe.

"On several occasions, as, for example, in paralysis, and some obstinate forms of sciatica, the frequent repetition of the moxa will be required before the disease is subdued, so that, to act on it, an eschar must be produced. When the eschars are thrown off, ulcers are formed; and, where they are very numerous, they cause considerable irritation to the patient, and the discharge produced by them may be more than is suited to the weak state of his system. In these cases, the application of the moxa, in conjunction with the needle, will be found a most excellent mode of using the remedy.

"When the moxa and acupuncture needle are used in conjunction, the following is the mode of operating: I perforate a moxa of a proper size by a needle, of such a length as will be sufficient to reach to the seat of disease, and at the same time extend so far beyond the surface of the skin, as to keep the moxa about one inch from it, or so far as to secure the texture of the skin from injury. The needle is then introduced as far as the seat of disease, by the assistance of the port-aiguille; and, as soon as it has been introduced, the port-aiguille is removed, the needle being left in the part. The moxa, which had been previously perforated, should be now placed in a state of combustion on that end of the needle which projects beyond the surface of the skin, and allowed to burn round the needle, by which it is thus transfixed. The heat disengaged from the moxa is communicated to the needle, and thence conveyed to the seat of disease. When the needle has cooled it is removed, and the wound or eschar produced by it is scarcely observable. I have also employed, with remarkable efficacy, the preceding mode of using the moxa, in cases which required the intense application of this remedy; but in which the texture of the skin could not be injured, nor an eschar with propriety formed.

"It is recommended by Larrey, that, immediately after the application of the moxa, the skin should be wet with the water of ammonia, and this for the express purpose of preventing the occurrence of inflammation: the very effect which those who do not understand the mode of action of moxa, are desirous of producing! Upon what principle the Baron expected such a result from the application of ammonia I know not, for he has not made any remark upon the mode of action of this

application. Its effects are, however, such as he states, and clearly explicable, as will hereafter be proved, on sound physiological ground. It will, however, answer the same purpose to apply any other powerful stimulus. Alcohol, ether, turpentine or ammonia, may be indiscriminately used; or, even bruised garlic, which Ten Rhyne recommends in his work De Arthritide. The neatest mode of applying the water of ammonia, alcohol, &c. is by a glass-tube. The fluid ascends in the tube, as soon as it is placed in the bottle containing it. The operator should then put his thumb on the end of the tube, while he lifts it from the bottle, and thus retains in the tube a sufficient quantity of the fluid, which he can then allow to drop on the surface of the skin as he pleases. I may here mention, that I have found tubes of this kind extremely useful for the purpose of dropping fluids into the eye.

"In the first and last modes of applying the moxa, no after-treatment is required, farther than the temporary application of the stimulants just mentioned. When eschars are produced by the application of the moxa, the part should be kept covered by a piece of adhesive plaster, until the eschars are separated. This separation will generally take place in the course of eight or ten days, but sometimes not for double this period; and, it is remarkable, that the moxa acts more favourably in those cases in which the eschar is thrown off very slowly, than in those in which its separation takes place with rapidity: the reason of this will appear hereafter. The superficial ulcers, which result from the separation of the eschar, as also the excoriation which follows the vesication produced by the second mode of applying the moxa, should be washed once or twice a day, until they are healed, with a solution of the nitrate of silver, or sulphate of copper, and covered by adhesive plaster. The ulcers left by the separation of the eschars will always be found much less deep than might have been expected, but greater in their superficial extent than would be supposed from the appearance of the eschar; and they will, therefore, in general, require some days for their cicatrization."—P. 69, 70, 71, 72, 73.

On the whole, though we see many objections that might be urged to his theory of the mode in which he conceives that moxa produces its effects; yet we admit that much of it, perhaps the greater part, is correct; and, with no reserve or hesitation, pronounce his work an useful and cheap addition to the library of the practitioner, and an honourable testimony to the zeal and ingenuity of its author.

Memoire sur les Causes des Convulsions chez les Enfans, et sur les Moyens d'y remedier. Par C. Dr J. L. Brachet, Medecin de l'Hotel-Dieu de Lyon, Membre Correspondant de la Societé de Medecine, de la Societé Medicale d'Emulation, et du Cercle Medical de Paris, &c. 8vo, Pp. 292. Paris, Bechet, 1824.

Memoir on the Causes and Treatment of the Convulsions of Children. By J. L. Brachet, M. D. Physician to the Hotel-Dieu of Lyons. 8vo, pp. 392. Paris, 1824.

THIS memoir, which gained the prize in 1824, is highly lauded by the representative of the commission of the medical circle of Paris. That gentleman reports, "The memoir is distinguished by new views, and numerous well related cases."

The author enters upon his subject by historical researches into the history of convulsions, briefly points out the opinions of authors from Hippocrates downwards, and fixes the exact extent of the appellation. By thus determining the characters of the disease, he has avoided the very common confusion resulting from the want of such positive limits. He has also avoided the common error of compounding, consecutive, or symptomatick convulsion with the primary affection.

Eclampsia, or puerile convulsions, is a term employed by Hippocrates, and is supposed by the critics to be borrowed from the fact, that flashes of light, ἐκλάμψεις, occasionally appear before the eyes of persons seized with convulsions. He certainly uses the word in this latter sense, in Epid. lib. ii. Sauvages has also employed it to express the convulsions of infants, though Cullen, both in his Nosology and in the valuable chapter on Epilepsy, which he has left us, in his First Lines of the Practice of Physic, has confounded it with Epilepsy. The distinction, however, assumed by Sauvages and our author, seems quite satisfactory, *that, in epilepsy, there is a complete loss of sense, from the beginning to the end of the paroxysm; but that, in eclampsia, the sense either remains entire; or is impaired for a part only, shorter or longer, of the paroxysm.* Cullen's definition of convulsion, therefore, "clonic irregular contraction of the muscles, without sleep," may either be considered as applied to the forms of eclampsia *without* insensibility, or to the clonic spasms of adults; for, though mere age should not, *à priori*, be allowed to constitute a nosological distinction, yet, when the symptoms derive a character and peculiarity from age, the objection vanishes; and Cullen himself has set the example. He has shewn, that epistaxis *juvenum* and epistaxis *senum* are two

very different complaints. Confusion of names implies confusion of ideas ; and the latter almost always leads to obscure, uncertain, or improper practice. The sum of Dr Brachet's diagnosis may be abridged as follows.

In confirmed epilepsy, the loss of sense is constant, *and exists from the beginning to the end of the accession ;* whilst, in convulsions, it only takes place during the violence of the paroxysm in its highest point, and ceases before it is entirely terminated, immediately, indeed, upon its beginning to decrease, or relax in its severity. Sensibility *(of tissue)*, which is, in general, found to be entirely suspended in epilepsy, is so little diminished in convulsions, that we often succeed in soothing the latter by irritants applied merely to the skin; and sometimes these irritants rapidly produce intolerable pains. The violence of the convulsive action of epilepsy is always of very short duration ; it lasts, on the contrary, entire hours, nay, often much longer in eclampsia ; and, even when the violence of the spasms is of short duration, it is not rare to see them return a great many times during several days in succession. The epileptic paroxysm is always of brief continuance, and is, in ordinary cases, not reproduced during several hours, often not during several days, and most frequently not during several weeks. The comparative danger of epilepsy and convulsions is also very different ; a vast proportion of children are cured of eclampsia without relapse ; after a certain age they never reappear, whilst epilepsy, on the contrary, is almost always incurable, as physicians agree, and its accessions increase in frequency and intensity with the progress of years.

Our author finds nothing satisfactory in the dissections he relates, with a view to investigate the theory of convulsions. He discovers various forms of cerebral lesion, effusion, congestion, inflammation, adhesion, ulceration, &c. of the cerebral mass ; and these he considers as links in the series of events which produces puerile convulsion. Still, the only common circumstance, in which he can find them to agree, is irritation of the central mass of the nervous system.—P. 296. He scouts the idea of considering these phenomena as the effects of the eclampsia, but without urging any proper reason. He does not seem to have heard of the experiments of Dr Seeds, by which it appears, that effusion into the ventricles of the brain is a natural consequence of convulsions ; and he has not profited sufficiently by the experiments upon cerebral irritation in animals, nor by the authentic facts known of convulsions supervening to wounds of the head.

The exciting causes he delivers under three heads.

Causes which act directly upon the brain.
Causes which act upon the extremities of the nervous terminations.
Causes which act in the course of the nerves.

Under these respective titles we meet with little which merits being offered to the reader. The etiology of diseases is but too little studied. On that branch of knowledge, almost solely, depends their prevention; and we regret extremely to say, that, however much the latter is to be preferred to their cure, it is rare for a new fact, having this bearing, to be met with in our practical works. Our author supposes, that an acrid state of the secretions may produce eclampsia; also, the milk of a passionate nurse, mere hunger, or gaseous distention of the alimentary tube. The passions, jealousy, of other favourites in particular, have oftener a share in their production than is imagined.

The treatment recommended by our author presents nothing very peculiar. He bleeds when there is congestion in the head, applies blisters, rubefacients, and other counter irritants; he disapproves, however, of purgatives and vermifuges, except the disease originates from worms. Antispasmodics he considers highly valuable.

In fine, we esteem the history and diagnosis of eclampsia, illustrated by about forty cases, as the most valuable part of the work.

Observations et Recherches sur la Cyanose, ou Maladie Bleue. Par E. Gintrac, Docteur en Medecine de la Faculté de Paris, Professeur d'Anatomie et de Physiologie à l'Ecole Royale Secondaire de Medecine de Bordeaux; Medecin des Epidemies, Membre du Conseil de Salubrìté du Department de la Gironde; Medecin-Adjoint de l'Hospice des Enfans trouvés; Membre resident de l'Academie Royal des Sciences, Belles Lettres et Arts, et de la Societé Royal de Medecine de Bordeaux; Membre Honoraire de la Societé Linnéenne de la meme ville, et de la Societé de Medecine, Chirurgie, et Pharmacie du Department de l'Eure; Correspondant de l'Athenée de Medicine de Paris, et des Sociétés Medicales de Montpellier, Toulouse, Marseilles, Tours, &c. 8vo, pp. 313. 1824.

Observations and Researches on Cyanosis, or the "Blue Disease." By E. Gintrac, M. D. 8vo, pp. 313. Paris 1824.

The above is a valuable monography, one of the few which we can, *in limine*, recommend to our readers. About 200 pages of it are occupied in the details of almost all the cases of

cyanosis yet published, amounting to 53 in number. In detailing these, we observe a degree of familiarity with English literature in the author, not very common with our medical brethren in France; and we are so satisfied of the advantages to be obtained from studying diseases of structure in this comprehensive way, that we have thrown the results of the dissections of these cases into a tabular form, in which, to save room, we have employed the initials of the parts essentially concerned.

Thus A^1, A^2, are the right and left auricles;
V^1, V^2, the right and left ventricles;
O, D, the foramen ovale, and ductus arteriosus;
P, A, the pulmonary artery, and aorta.

By these abbreviations the tabular form is preserved, and the eye assisted in drawing the rather unexpected conclusions subjoined to it.

Table of the Results of Dissection of the Heart and large Vessels in 53 Cases of Cyanosis.

Case 1. O open. P contracted.
2. A from V^1 and V^2; O open, P contracted.
3. O open. P contracted.
4. O open. P obliterated; but A and D open.
5. A from V^1 and V^2; P contracted.
6. A from V^1 and V^2; P contracted.
7. O open.
8. O open. D open.
9. A from V^1; P from V^2; D and O open.
10. A from V^1 and V^2; O open, P contracted.
11. A from V^1 and V^2; P contracted.
12. Single heart, A^1 V^1; A and P from V^1 by common trunk.
13. O and D open.
14. A from V^1 and V^2; O open.
15. Single heart, or A^1, V^2. A and P from V^1 by common trunk.
16. Auricular septum absent; A from V^1 and V^2.
17. O and D open, P contracted.
18. Ventricular septum perforated.
19. Ventricular septum perforated. P dilated, D open.
20. A from V^1 and V^2; O open, P contracted.

Case 21. A from V^1 and V^2; O open, P contracted.

22. O and D open.

23. A from V^1 and V^2; P contracted, O obliterated.

24. A from V^1; P from V^2. D open.

25. O and D open. Ventricular septum pierced with three holes; P obliterated.

26. A from V^1 and V^2; P contracted, O open.

27. A from V^1 and V^2; O and D open; P obliterated.

28. O open.

29. Single heart, or A^1, V^1. P from A.

30. O and D open.

31. A obliterated after giving off the cephalick and brachial. P from the two ventricles, producing the aorta descendens. O open.

32. A from V^1 and V^2; P contracted.

33. A from V^1 and V^2; P obliterated, but D supplying its branches.

34. A from V^1; P from V^2; O and D open.

35. A from V^1 and V^2; A contracted, O open.

36. Two auricles opening into right, V^1. No ventricular septum.

37. A from V^1 and V^2; P contracted, O open.

38. A from V^1 and V^2; P contracted, O open.

39. Scarcely any ventricular septum, P contracted.

40. O very open. Walls of V^2, very thick.

41. A from V^1 and V^2; O and D open.

42. A from V^1 and V^2.

43. O open.

44. O open. Ostium venosum contracted.

45. A from V^1 and V^2; P contracted. O open.

46. A and P from the left V^2; No auricular septum, D open.

47. A from V^1 and V^2; P contracted.

48. O open; P contracted.

49. A from V^1 and V^2.

50. O open, P contracted.

51. A from V^1 and V^2.

52. O open, P. contracted.

53. O open, P obliterated from birth.

Hence we discover that the,

†	Aorta arises from both ventricles -	22 times in	53
†	Oval hole unclosed, is the chief circumstance,	19 ———	53
	Oval hole unclosed, in whole, - -	33 ———	53
	Ductus arteriosus unclosed, - -	14 ———	53
	Ductus arteriosus unclosed, chief circumstance,	0 ———	53
†	Single heart, of one auricle, one ventricle, -	4 ———	53
	Ventricular septum imperfect, - -	5 ———	53
	Pulmonary artery smaller than natural, -	22 ———	53
†	Pulmonary artery obliterated, - -	5 ———	53
	Aorta obliterated, - - - -	1 ———	53
†	Aorta rising from right ventricle, pulmonary artery from the left, - - - -	4 ———	53

The circumstances marked thus †, are the principal variations of structure which give rise to the blue disease. Of these the origin of the aorta from both ventricles, and the unclosed state of the oval hole, occur by far the most frequently. The names of the authors from whose works the cases have been taken, and the publications in which they appeared, are all carefully noted by our author.

Causes.—Cyanosis is but in few cases hereditary. The pregnancies of the mother exhibit nothing remarkable; but of forty-four cases of which the sex is noted, sixteen only were females. It may appear at any age; the 40th case of our catalogue first appeared in the 45th year. Dr Gintrac conceives, that the disease has been seen most frequently in England, but also very often in Germany and France; more rarely in Italy, Holland, and Prussia. We suspect this remark should merely be applied to the relative state of medical literature in those respective countries. Obstructions of the lungs, mechanical, congenital, or acquired, contribute to its formation. Cough, crying, and disturbed respiration, may also produce it. Percussion, falls, any violent or sudden motion, may give the same result. Spasms and convulsions, the eclampsia of children, spoken of in another part of this Number, may likewise induce it. Cases 20, 30, 45 of our series were thus induced. Violent passions of the mind seemed to produce the cyanosis of cases 2, 3, 51. Indeed if we consider the numerous cases of open foramen ovale met with in dissection, without any cyanosis whatever having shown itself during life; and that the two auricles are both filled and both contracted at the same instant, the left being the strongest, it will rather appear wonderful that the blood of the left side does not pass into the right side of the heart, than that the blood of the two auricles should often be so much in equilibrium as to retain each their own situation. If the valve of the foramen ovale be perfect, and merely unattached at the upper margin,

the stronger contraction of the *left* auricle will shut the valve (which nature, for this very purpose, has left in its own cavity) close against the septum of the auricles, and resist completely the entrance of venous blood into the left side of the heart, and, consequently, the formation of cyanosis. In short, in order to produce cyanosis, there must be superadded to the natural impulse of the venous blood, a force sufficient to overcome the resistance of the left side. Lastly, escape of small quantities of venous blood into the left side of the heart cannot produce cyanosis. The experiments of Bichat, *(Recherches sur la Vie et la Mort)*, demonstrate this, as also the fact of our being able, after full expiration, to hold in our breath for $1\frac{1}{2}$ minutes, or about 100 contractions of the heart, and, consequently, during 100 discharges of the blue blood of the ventricle into the circulating mass, yet without having induced cyanosis.

Viewing the symptoms in a "Hippocratical light," our author thinks all the accidents of cyanosis resolve themselves into four forms.

"1. Blue colour of the skin produced by a vicious conformation of the heart, or by the persistence of the openings and canals peculiar to the fetus, and producing a mixture of black and red blood.

"2. Blue colour of the skin, constituted by the same mixture, but taking place long after birth, from causes which restore these passages, or change the mode of circulation in those cases wherein the passages had been preserved.

"3. Blue colour of skin, without confusion of venous and arterial blood, coinciding with an organic disease of the heart.

"4. Blue colour of skin, without preservation or restitution of the fetal passages, but developed after a suppression of the menstrual flux."—P. 3.

Of the cure, our author, of course, frankly expresses his despair. He conceives, indeed, that slight derangement may be restored by time and rest, and that adhesive process, by which the original apertures are shut up in the infant; but on this he relies very little. His work, we repeat, is from the hand of a master, and may be consulted, with advantage, by all who would study the terrible symptoms of the blue disease.

Practical Observations on the Symptoms, Discrimination, and Treatment of some of the most important Diseases of the Lower Intestines and Anus, particularly those affections produced by Stricture, Ulceration, and Tumour, within the Cavity of the Rectum; and Piles, Fistulæ, and Excrescences formed at its External Opening. Illustrated by numerous Cases; to which are added some Suggestions upon a new and successful Mode of correcting habitual confinement in the Bowels, to ensure their regular Action without the Aid of Purgatives, on a principle essentially conducive to the Prevention of the above Diseases. By John Howship, Member of the Royal College of Surgeons in London; of the Societé Medical d'Emulation in Paris; and of the Medico-Chirurgical Society, London: Author of Practical Observations in Surgery and Morbid Anatomy; and of Practical Observations on the Diseases of the Urinary Organs. Second Edition, 8vo. Pp. 240. London, Longman. 1821.

We have not transcribed this copious title page with any intention of making its distinguished author or his book better known to our readers; but merely in order to direct their attention to the last division of his work, the suggestion for inducing a regular state of the bowels without the aid of purgatives. We do this because we observe a lamentable deficiency, we had almost said ignorance, on this score, among general practitioners; and because we have lately witnessed several cases, one of them under our own care, absolutely restored to a natural state of the alvine function, by pursuing his method. Small books, like the present, are apt to be lost sight of both by medical teachers and practitioners; and the new truths they contain, are, in nine cases out of ten, recollected merely from a cursory perusal of transitory compositions like the present, which are doomed never to be read again; but, by enjoying the privilege of being read only at leisure hours when the mind is disengaged, are more strongly impressed, and more readily remembered.

Mr Howship's method, p. 228, essentially consists in adding tone or strength to the stomach and bowels, by means of general corroborant medicines, of which he finds that bark is the best. The idea is by no means novel; for it was upon a supposed exertion of its tonic and evacuant powers in combination, that rhubarb was so highly lauded as a cathartic in the latter end of the last century. But Mr Howship is the first, to our know-

ledge, who proposed *the substitution of a tonic plan, for the usual purgative one pursued.*

Waving all questions as to the mode in which tonics operate their effects, no rational man will deny us, that both *bitters*, astringents, aromatics, stimulants, *when properly managed in enfeebled habits*, do frequently strengthen the stomach, as is demonstrated by the improved digestion, the diminished irritability of that organ, and the increase of vigour in the moving powers. Nothing is so common as to find the bowels participate in this improvement; costiveness, diarrhea, and indeed every irregularity disappearing, and giving place to a natural and vigorous performance of the function.

Now, what takes place in constipation with dyspepsia, may also take place in constipation without it; and we must remind the reader, that the latter is the case with by far the greater number of temperate but delicate and sedentary persons, including a vast majority of females, and of the inhabitants of large towns, at one or other period of their lives. To such, then, Mr Howship's corroborant practice, may be supposed to be of essential service, both as a preventive and cure. Having made these few remarks, to shew the reasonableness and success of the practice, we may, perhaps, be allowed to add, that, in the case alluded to above, two grains of *genuine* sulphate of quina taken three times a day, exercise, the bath (at 103°) and the flesh brush, constituted the whole remedial means employed. We subjoin Mr Howship's account of his method:—

"A circumstance that occurred in the year 1808, while doing duty as surgeon to the 82d regiment, led me to believe, that, in many cases of confinement of bowels, medicines may be so directed as to render purgatives unnecessary.

"It happened that an elderly lady, residing at Scarborough, desired my opinion, requesting me to point out, if I could, some plan, by the adoption of which she might obtain a more regular action of the bowels. She had no complaint to make as to her general health; her appetite was good, and she slept well, neither did there appear to be any material defect in the condition of the digestive organs, the only objectionable circumstance being, that of her scarcely ever passing a stool without the assistance of medicine. The advice, she said, she had always received from her professional friends was, that, when confined in her bowels, she should still have recourse to opening medicines; she added, that really she had taken so great a variety, and so large a quantity, that she loathed the very idea of going on; and felt extremely anxious to know if any plan could be suggested to render it unnecessary.

"On reflection, it appeared probable that this was an instance of deficient action, from defective strength; and that, perhaps, by persevering for a time in the use of medicines calculated to restore tone, the bowels might recover the disposition, as well as power, to propel

their contents with regularity; at any rate, it appeared to me there could be no harm in making the experiment. I therefore ordered the decoction and tincture of bark to be taken daily. This, in a week, appeared to have done neither good nor harm; there was no heat of tongue or skin; but there had been occasion for castor oil. Decoction of bark was next directed by itself, and in three weeks she thought her inside felt stronger, with less disposition to flatulence than before. In consequence of this amendment, the medicine was continued for a month longer, within which period she found there was no longer any occasion to solicit the action of the bowels at all, a regular and easy motion occurring every day. This restoration in the tone and action of the bowels appeared likely to be lasting; for there had been no return of the complaint a year and a half afterwards." Pp. 231—233.

Materia Indica; or some account of those Articles which are employed by the Hindoos, and other Eastern Nations, in their Medicine, Arts, and Agriculture; comprising also Formulae, with Practical Observations, Names of Diseases in various Eastern Languages, and a copious list of Oriental Books immediately connected with General Science, &c. &c. By Whitelaw Ainslie, M. D. M. R. A. S. late of the Medical Staff of Southern India. 2 vols. 8vo. Pp. 654 and 604. London, Longman & Co. 1826.

THE arts of England have followed her arms across the hemisphere. Medicine has shared in the general movement, and medical societies, and learned medical publications, are every day appearing in India, and complete a long catalogue of examples of that inherent superiority which has placed a handful of the followers of the Cross over a hundred millions of the votaries of Brama and the Crescent. The obstinate, bold, but uninventive Mahometan; the placid, imitative, subordinate Hindoo; the rude Tartar, and the acute Chinese, find themselves not less inferior in the arts of ordinary life, than in that primary one which teaches the means of its defence. The works of the *Vytians* and *Hakeems*, when compared with the medical works of our countrymen, afford equally triumphant proofs of the victorious genius of Britain, as the beaten squadrons of Surajah Dowlah and Tippoo Saib evince the greater prowess and more judicious combinations of our men of war.

The work before us consists of two volumes of nearly equal size; yet the whole of the first of them is occupied with notices of the articles of British materia medica found in Eastern countries. All of these, indeed, have not been transferred from Bri-

tain to Hindoostan ; but very many of them, through other channels, have forced themselves into the bazars of a people extremely retentive of their national arts and manners. The second volume embraces a valuable preliminary dissertation, short notices of Indian writers on medicine, who are much more numerous than might have been expected, and a catalogue of 441 articles of medicine exclusively in use among the Hindoos and other eastern nations.

The third volume, not yet published, is designed " to treat of such articles as are used by these nations in their arts and manufactures; and also of those vegetables which are cultivated as food, and which will be observed to embrace a very numerous list, the natural consequence of this circumstance, that as a large proportion of the natives of India are prohibited by their religion from eating animal food, they have naturally been led to seek for a luxurious variety in another kingdom."—Pref. p. x.

Dr Ainslie published the first edition of this work at Calcutta in 1813; and had the mere reprint of that impression been now announced, we should have confined our analysis of its contents to the narrowest compass practicable, with what would still have come within the measure of our duty,—the presenting the reader with a clear idea of the nature of a rare and interesting work, which has never been so generally diffused amongst the members of the profession, as its own merits and the importance of its subject demands. But, in this present form, the work has been completely remodelled ; and, as Dr Whitelaw Ainslie adds to his quality of pharmacian, great research in ancient and modern, as well as in oriental medical learning, the attainments of the naturalist, the botanist, and the accomplished physician, we feel, that, in entering upon a description of his work, we are taking upon us an office of great responsibility, but one upon which we may boldly venture without hazard of accusation, or languor in he reader, from want of novelty. The facts are almost entirely new ; and to us the great difficulty to be mastered, is the rendering such an abstract as shall be alike just to the author and his reader.

The list of substances in the first volume, amounts to 250 miscellaneous articles, and 22 metals and metallic substances. In noticing these in the alphabetical order adopted by our author, we shall merely give their names, unless something worthy of remark, besides the bare fact *of their being used in the East,* demands a few words in addition.

Sulphuric Acid.—The Vytians, or Hindoo physicians, prepare this by burning sulphur, with a small portion of nitre in earthen vessels.

Nitrous Acid.—Made by mixing 20 parts of saltpetre, 16 of alum, 18 parts of the vegetable acid of Cicer arietinum, called *cádálay poolippoo neer,* and distilling with increased heat. The

vegetable acid is obtained, from the dew of the plant, by wringing cloths laid over it all night. The acid is a compound of oxalic, malic, and a little acetic acid, and is used by the Hindoo physicians as a cooling drink, and employed by them as a common menstruum for medical purposes.

Muriatic Acid—is made from common salt 8 parts, alum 6 parts, the above vegetable acid, cadalay poolippoo neer, 8 parts. The salts and alum being well dried and pounded, the acid is added, and the muriatic acid is distilled over from it by heat.

Agaric (garikoon *tam.*). Almond, from Persian Gulf. Aloes (Zocotora, Yemen). Alum, Upper Hindostan. Amber, Deccan. Ambergris, Indian Sea. Anise seed, Persia. Arrowroot, from the Curcuma angustifolia of Travancore. Assafetida. Artichoke. Assarabacca. Asparagus, by the English, does not thrive. Balm. Balm of Gilead. Bean: the Windsor bean, Vicia faba L. does not thrive in any part of India, but it is not missed; the Bellore, or Duffin bean, succeeds admirably in its place; it is about the same size, but flatter, of a more delicate taste, and highly nutritious; it was brought to India from the Mauritius, and is the Phaseolus lunatus L. or, more properly speaking, a variety of it, not known for culinary purposes in Europe. Bdellium. Beef, ox, in Hindoostanee *byln* and *gow*. Benzoin. Bezoar. Bishopsweed. Petroleum, Persian Gulf. Bole armenic. Borax. (Buruk, *Arab.*) Cabbage, (kelum, *Persian.*) Cocoa. Camphor, (kāpur, *Sans.*) Capillaire. Cardamom; cardamom, greater. Carp. Cassia lignea. Cassia fistula. Castor. Catechu, (Cutt, *Hindos.*) Chalk. Chamomile. Charcoal. China root. Cinnamon (kāimanis, *Mal.*). Clay. Clove. Cochineal. Coffee (*cāpi cottay*, Tam.). Coloquintida. Columba. Conessi, or oval-leaved rosebay. Coral. Coriander seed (*cotumbāroo*, Cyng.) Cowhage, (kiwach, *Hind.*). Sea-crab. Cresses. Creyat (*kairātă*, *Sans.*) *Justicia paniculata*, Lin.; highly prized as a tonic and stomachic. It now grows in Tinnevelly, to which it was first brought from the Isle of France. It forms the basis of the famous French bitter tincture *drogue amère*, and was eight years ago presented to us as a curiosity from its extreme bitterness. Exactly as Dr Ainslie describes, it was about a foot and a half in length, rigid, and four-cornered. Vahl says it may be distinguished from all the other numerous Justicias, by having capsules compressed, flat, and of the same breadth from end to end.

Cubebs, (*cubāb chinie*, *Hind.*) Cumin. Croton. Dill. Spotted Deer. Dittany of Crete. Dragon's blood. Duck. Egg; fowl smaller than in Europe. Sambucus or Elder. Elecampane. Euphorbium. Swietenia febrifuga. Nigella sativa. Fennel. Fenugreek. Papaw Fig. Floriken (Otis campestris, Lin.)

Flour. Several kinds of wheat are now cultivated with great success in many parts of India; two varieties of the Triticum æs-

tivum are now commonly reared in the interior and northern provinces of Hindoostan during the cool season. T. aestivum is *godhūma* in Sanscrit. Of the Triticum hybernùm, two varieties are also cultivated. The T. monococcum, and T. spelta also occur. The natives of India eat wheat, but they have many other grains which they like better; in the same way that the natives of Egypt, Mesopotamia, and Assyria, according to Niebuhr, give their *dourra* (the Holcus saccharatus, Lin.,) the preference to all other grains, and will even sell their wheat to purchase it. In the Carnatic, the climate is too hot to grow wheat with agricultural advantage; neither does it appear that the climate of the Mysore is very favourable for its culture: The wheat of Upper India is excellent.

Frankincense. Fumitory. Galanga. Greater and lesser Galbanum. Galls, in Moultan. Gamboge. Garlic, used in the Indian *curries.* Ginger, (*Inghuroo, Cyng.*) Gingseng, Panax quinquefolium, L. Goat; much eaten by the native Indians. Grapes: the vine thrives abundantly in India, but the rapid fermentation occasioned by the heat, prevents the grapes being employed except as fruit: Wine cannot be made. Gum ammoniac, carried to India. Indian Gum arabic, from Feronia elephantum. Gum tragacanth, imported into India. Hare, common in India, and much fleeter than the European hare; smaller also. Black Hellebore. Henbane, imported from Turkey. Hog: The Sus babiroussa, Lin. is common in the woods and jungles, and, if killed at certain seasons, when the animal has been feeding on the sugar cane, is certainly, of all animal food, the most delicate and delicious; it is not fat, rich and heavy like pork, but resembles more venison of the finest quality: it lies light on the most dainty and delicate stomachs; and, after the fish whiting, is commonly the first animal food that is allowed to convalescents in India. Horse-radish. Indian, or Moorunghy root. Hyperanthera mooringha, or Hyssop; not in India, but known. Indigo. Iris, not there. Kid, good in India; less heating than lamb. Kino, "Botany Bay kino, the only one I have seen in an Indian bazar, is much more austere than the African drug, resembling rather that obtained from the Coccoloba uvifera of Jamaica, but without its acidity."—p. 186. Labdanum, not Indian. Lac. Leech. Lime, Citrus medica L. Quicklime, (*Chunna*, Hind.) Lint. Spiritous Liquors,—(*Arrak, Duk.*) Liquorice root. Mace. Madder of Bengal, *Rubia manjista*, Roxb. Mallow leaf, Sida maritima, Lin. Mandrake. Manna, from the *Hedysarum alhagi* of Mesopotamia. Marjoram. Mastiche. Melon Milk, (Dugda, *Sans.*) Goat's Milk. Asses' Milk. Millet. Madder-root. Mullet. Musk. Mustard. Mutton. Myrobalan belleric; Myrobalan chebulic; Myrobalan emblic. Mint.

Myrrh. "The *Vytians* in India order this substance occasionally in such cases as require gentle cordials; they also employ it externally,

when mixed with lime-juice, as a repellant in tumours and violent bruises."—Vol. i. p. 244.

Natchenny, deadly night-shade, (not Indian). Nutmeg. Oil of almonds (not Indian); castor-oil; oil of cloves; oil of kanari; oil of kyan paotie or cajeput: oil of mace; oil of nutmeg; oil of mustard-seed. Petroleum. Olibanum. Olive (not Indian). Onion. Opium. Opobalm or balm of Gilead (not Indian). Opoponax (not Indian).

Orange. "The orange tree, though successfully cultivated in the West Indies and the South of Europe, is, properly speaking, a native of India, Ceylon and Persia. There are many varieties in Hindoostan, differing much in sweetness as well as appearance. In sheltered situations in the lower provinces, such as at *Sautgur*, near Vellore, in the Carnatic, and at Chittore, they are peculiarly fine. The following varieties are cultivated at the last mentioned place: 1. The cumbla *nabla* (Tel.), which is a large loose-skinned orange; it is the hill orange of the Northern Circars, and is sometimes called *mandarine orange*. 2. The *burray chin* (Duk.), or *buttāi* (Tel.), this is termed in Hindoostanie *sautara* or *sungtura*, and is a fine smooth-skinned, cloved, large orange, and very sweet, resembling what is called the China-orange in Europe (Citrus sinensis). 3. The *hydrabādie* (Tel.), this is smaller than the last mentioned, but, like it, it is cloved and smooth-skinned, and very sweet. 4. The *chota chin* (Duk.), or small cloved orange. 5. The large *coffrie orange*, the skin of which is very rough; it is a sweet, well-flavoured fruit. 6. The common orange of the country, usually called in Hindoostanie *koula* and *kichlie* (Tam.), it is austere and coarse.

Oranges are brought to India of an excellent quality from Ceylon, and from Sumatra. They are growing wild in Cochin-China (Flora Cochin-China, vol. ii. p. 466.). Mr Crawford informs us, in his "History of the Indian Archipelago," that the orange and lemon tribe is widely spread over the Indian Islands, but the culture of the best kinds seems to have been introduced by foreigners. The whole tribe, he adds, is distinguished by a generic name, which in Java is *jaruk*, in more eastern dialects, *usi*. Colonel Kirkpatrick tells us, that in Nepaul, oranges grow of a fine kind in the valley of *Noakote*, and are there called *santola*, which, he thinks, is probably a corruption of the word *singterrah*, the name given to a particular sort in the upper provinces of India; in which provinces the best oranges are those of *Shahabad* and *Behar*.

"Oranges are in great repute amongst the Hindoo physicians, who suppose that they purify the blood, allay thirst in fevers, cure catarrh, and improve the appetite. A sherbet, made with the juice of the ripe fruit, is a favourite beverage with Europeans in India in hot weather; and is certainly much safer than that made with lemon juice, which is extremely apt to bring on cholera morbus. The rind of oranges is well known to be a useful carminative, and is a valuable addition to bitter infusions in cases of dyspepsia and flatulence. It is with rind of the *chota-chin*, or small clove orange, that the finest mar-

malade is made in India, adding, to give a little bitterness, some of the rind of the common country orange."—Vol. i. p. 282.

Orris. Ortolan.

Oyster. "The oysters of the Coromandel coast, though by no means large, are inferior to none in any part of the world, and are best in the months of May, June, July and August. The places they are found, of the best quality, are the following: at *Alumparva*, *Ennore*, and near *Ramnad;* at these fisheries they are excellent; at *Karikaul*, *Topetory* and Sadras, not quite so good; at Fort St David and Cuddalore tolerably good. On the Malabar coast the best oysters are procured at Callicut; they may also be got of a good quality near Tellicherry, and, in fact, at many other places along the shore; also at the mouths of several rivers, where oyster-beds have been made by the natives. They are best in Malabar in the months of March, April and May.

"The oysters brought to the Calcutta market are mostly all from Chittagong; they are very large, so much so, that they require being divided before they are eaten; at certain seasons they are much prized."—Vol. i. p. 287.

Partridge, *common over all India.* Peacock. Pearl. Pea (not Indian). Peach. Pellitory (not Indian). Black Pepper. Cayenne Pepper, or *Chilie*, of India, not the product of the Capsicum annuum, but of the Capsicum frutescens, Lin. Long-pepper, (Pippali *Sansc.*). Pheasant. Pigeon. Pine-apple grows wild in the woods of Ceylon, and is there called Anasi. Plantain. Poison-nut.

Pomegranate. "The bark of the root the Mahometan physicians administer in diseases requiring astringents, and, moreover, consider it as a perfect specific in cases of tape worm: it is then given in decoction, prepared with two ounces of fresh bark, boiled in a pint and a half of water till but three quarters of a pint remain; of this, when cold, a wine-glassful may be drank every half hour, till the whole is tâken. This quantity occasionally sickens the stomach a little, but seldom fails to destroy the worm, which is soon after passed."—Vol. i. p. 323.

Pomphlet. Poppy.

Potass. "The more enlightened *Vytians* know how to prepare an alkaline salt from the ashes of burnt vegetables, which they usually distinguish by the name of the plant from which it is obtained; such as *valley elley ooppoo* (the salt of the plantain leaf.) The *Vytians* consider it as diuretic, and prescribe it accordingly: it is the potash, or pearl-ashes of commerce.

"The same description of men also know how to prepare from that salt, though in a clumsy way, a sort of subcarbonate of potass, which they consider as diuretic; they are also in the habit of making with it a kind of *travagum* or strong liquor, by adding to it certain hot seeds: this they also consider as diuretic."—Vol. i. p. 327.

Potatoes not inferior to those of Europe or America in mealiness and taste, but smaller. Prawn. Quince seeds. Raisins (not Indian).

Rennet. "A knowledge of the preparation and use of rennet in Lower Hindoostan seems to be entirely confined to the higher classes of Mahometans; and there is this peculiarity in it, that it is the stomach of the kid that is employed for making it, and not that of the calf, which is used in Europe by the farmers for making cheese, and by the pharmacopolist for preparing whey. The Europeans in India, in making what they call cream-cheeses (and which are excellent), also employ the stomach of the kid, or a little lime-juice, which answers the same purpose. The Arabians suppose rennet to possess considerable medical properties, and to be of a deobstruent and attenuant quality. They are in the habit of preparing it from the stomach of different animals."

Resin of Chloroxylon dupada *Roxb.* Rice. Rhubarb. Rose. Rosemary. Rue. Saffron. Sagapenum (not Indian). Sage, Salvia bengalensis *Roxb.* Sago. St John's bread, Ceratonia siliqua.

Sal ammoniac. "The volatile salt of sal ammoniac, which the Tamools call *náváchárá acrānum*, and in Dukhanie is termed *soongna*, is prepared by the former in the following manner:

"Take of *navacharum* (sal ammoniac) one polum, *simie chúnāmboo* (chalk) two pollums; dry the two ingredients carefully, then mix them, and sublime with a strong heat.

"The sal volatilis, the native practitioners of India do not appear ever to administer internally, using it merely as a local stimulant to the nose, in fainting fits, languors, and hysteria. European practitioners recommend it in cases requiring diaphoretics, antacids, stimulants, and antispasmodics; in large doses it proves emetic. The common dose is from gr. iij. to gr. xx. in pills, or dissolved in water; to produce vomiting ʒss. may be given for a dose."—Vol. i. p. 367.

Salep. Common Salt; (lavana, *Sans.* loon, *Hindu.*) rock-salt, brought from Thibet, Bootan, Lahore and Nepaul. Saltpetre; salt, glauber. Sandal wood. Sandarach. Saucocolla. Sarsaparilla, substitute Periploca indica. Sassafras, native in Cochin China. Red saunders, (chandana, *Sansc.*) Scammony (not Indian). Senna. Snipe. Soap. Solefish. Soda, impure carbonate. Sorrel, Rumex vesicarius L. Southernwood. Sponge (not Indian). Squill, substitute Erythronium Indicum L. Stork. Storax (not Indian). Suet. Sugar, (sarkaria, *Sansc.*) Sulphur (scarcely Indian). Sumach (not Indian). Swallow-wort. Sweet flag, Acorus calamus Linn. Tabasheer. Tuac. Tallow, (from tallow-tree). Tamarind, (amlika, also Tantili, *Sansc.*) Tapioca or Tea. Grey teal. Purple Thorn-apple, Datura fastuosa Willd. (krishna, dhattura, *Sans.*) Tobacco, (tubaku, *Hind.* dhumrapatra, *Sans.*) Toddy, (tari or tadi, *Sans.*) Turmeric, Turnip, not good, stringy. Turpentine (not In-

dian). Tyre. Vinegar, (canchica *Sans.*) Walnut. Water-apa, amha, *Sans.* Wax. Wine, (mada *Sans.*) Whiting. Aloes wood or agallochin. Madras Wormwood, Artemisia madrapatana Lin. Yam. Yellow gum, resin of New Holland. Yeroocum pawl, or Asclepias gigantea. Zedoaria, Kaempferia rotunda. Zedoam Zerumbet, or Turmeric coloured zedoary.

Metals.—Sulphuret of antimony (not Indian). *Arsenic*, white oxide, yellow sulphuret, red sulphuret, golden coloured orpiment (not Indian). Copper, sulphate, subacetate (not Indian). Gold. Iron, (erumbo, *Tamool*), iron plugs, rust. Sulphate of lead, white oxide, ceruss, red oxide, litharge. Manganese, black oxide. Mercury, from Tibet and Nepaul. Silver. Tin, not found in our Indian dominions, but on the coast of Sumatra, Siam, Pegu, though not to the northward of 10° Lat., nor to the southward of 6° Lat. Zinc is procured in Madeira.

" The places whence it (Tin) is chiefly brought to India as an article of commerce, are Queda, Junk-Ceylon, Tavāi in Lower Siam, and the islands of *Lingin* and *Banca*: the tin mines of the last mentioned country are extremely rich, and are worked by the Chinese; from these mines, Mr Elmore tells us, in his '*Guide to the Indian Trade,*' (p. 20) are annually exported, not less than from forty to sixty thousand peculs of tin; and it appears by a valuable memoir on the subject of this metal in eastern countries, to be seen in the Asiatic Journal for January 1820, that at the two islands last mentioned, it is sold cheaper than at either Prio or Pera, or indeed any part of the Malay peninsula; and that must be cheap indeed, as the tin of the last-mentioned country, we know, is sold at Queda for about L. 48 per ton, and sells in China for L. 80 per ton. There are those who believe that the tin mines of Banca are comparatively a recent discovery, about the year 1710, as is stated by Captain Hamilton, who was in India at the time of the discovery; but how can this be reconciled with the facts, that the native Indian ships were found laden with tin, in the first voyages of the Portuguese, and that it was carried to China by the Arabs in the ninth century?

The tin ore of Banco is the common tin ore or tin-stone of mineralogists, and is usually of a reddish brown colour; " superior in value," Mr Crawfurd informs us, to block tin, twenty-two and a quarter per cent. The Cornish tin is obtained with vast labour, by mining through obdurate granite, often to the prodigious depth of many hundred fathoms. Banca tin, on the other hand, by digging through a stratum of sand and clay; and seldom to more than three or four fathoms in depth. 'To clear the Cornish mines from water, the most expensive and complex machinery is requisite; to clear those of Banca, a simple wooden wheel, costing a few shillings!' We learn from Kinneir's Geographical Memoir of Persia, that tin is found in that country, amongst the mountains south of Helat, in the province of Mekran (p. 224); and I was informed by the late Mr W. Petrie of Madras, that there is a tin mine at Penang; it would also seem, by Barrow's account, to be a product of Tonquin."

We have preferred delivering the European articles of Materia Medica employed in India, under the alphabetical arrangement adopted by the author, in order that they may afterwards be more easily referred to by our subscribers. The metals form a separate division in his arrangement also. We observed a few particulars in passing, which we may as well notice here.

The synonymes of the various individuals of Materia Medica, in most of the languages of the East, may be anticipated to be aboriginal, when the substance is native; and this we observed to be generally the actual fact.

When the plant is European, or Western, the synonyme in the Arabic, which may be considered the dialect of transition, has generally a reference to the European or Western name.

In the instances of Indian products, long known in the west, the Sanscrit appellation bears, in general, a very manifest etymological affinity to the European or Western name. It was for this reason that we copied all such as appeared to us to have any well marked similarity, allowing for the difference of dialects, and the transmutation of letters.

From this etymological observation the fair conclusion is, that the art of medicine, at least, has travelled from west to east, from Europe to India, contrary to what our author imagines; (see Preliminary Dissertation); and nations speaking the Arabian, or Shemitish dialects, have been the carriers. The imputed pride and immutability of Indian science has therefore, to continue with the comparison we took up at the beginning, been as flexible in respect of medicine as it has shewn itself in the affairs of war; and, from the men of the west, mercury and gunpowder have been equally adopted, for purposes of life and death, in the eastern hemisphere.

Of the western countries, Persia, Mesopotamia and Syria, seem respectively to have furnished the greatest number of articles of materia medica to India; and as this is the order of their geographical vicinity, there seems no reason to devise any sudden political convulsion to account for their progress. Time explains every thing.

We seek in vain among the rude processes of Hindoostan for traces of a former or more advanced state of pharmaceutical science. The articles transferred from Europe are exhibited in the primitive simplicity of form, which distinguishes the Homeric and Hippocratic ages. And the additions of modern origin, such as distillation of acids, (p. 4.) evince no greater degree of tact than ought to be expected to originate from a low price of labour, and an imperfect property in the soil.

Dr Ainslie has very properly resorted to the ancient writers on pharmacy; and his references on this subject greatly enhance the value of his work to those who take interest in the history of

the essential parts of the profession. If he has not drawn all the advantage he might from the former, in an archaeological point of view, he has at least contributed to the facility of consulting them.

On the whole, this first volume of Dr Ainslie's work is interesting to the physician, the antiquarian, the philologist and the traveller. To the young adventurer, who is preparing his mind for an advantageous disposal of his time during his sojourning in those distant regions, it is an indispensable companion. The knowledge of the names and characters by which to ask for, and prescribe, medicinal substances, with which the natives are familiar, must be of inestimable advantage to a surgeon stationed at a distance from the regular hospital stores. Dr Ainslie has had the case of the young Indian practitioner more especially in view, when he added, as he has done, the uses, and the opinions entertained of each substance by the most recent authors in Europe; and, in doing this, he has rendered his work a very complete system of Materia Medica, with respect to every article of it, whereof he has had occasion to treat. It will be perused with no less interest on the banks of the Ganges and Bramapooter, than upon the shores of the Forth and Thames; the Indian acquiring the improvements of the west, whilst the Briton mixes wonder with delight, when studying the still infant arts of the great cradle of the human race. We think much good might be done, and much gratification yielded, to the philanthropist, by an authorized translation of our author's work into the native languages of India. The first medical works of all countries, be it remembered, are receipt-books and Pharmacopoeias.

It is from the second volume of our author's book, however, that the European derives the greatest information; and whether we shall have space for it in the present number or not, the reader may be assured, that we will not part with it till we have made him acquainted with the most remarkable of the 441 substances which swell the native Pharmacopoeia of simple-loving phytovorous India. From the opinion we have formed of Dr Ainslie's judgment, we have little doubt that many of the substances he has ventured to recommend, will be found of the most decided utility in European practice. Already India owns the most elegant of our aromatics, the most active of our simples; and it will be singular, indeed, if no substance, possessed of new properties, is detected in so copious an addition.

(To be continued in our next.)

PART III.

MEDICAL INTELLIGENCE, FOREIGN AND DOMESTIC.

I. PRACTICE OF MEDICINE.

Case of Gangrene of the Lungs. By L. MARTINET. (From the Journal Universel des Sciences Medicales.)

A PATIENT admitted into the Hôtel Dieu, in a state of considerable weakness, presented great alteration of features, considered as the sequel of a long disease. No local affection was ascertained to exist. An ethereal julap, sweetened wine, warm fomentations to the abdomen, and sinapisms to the feet, were prescribed. The weakness, although great, increased; the respiration, examined by the stethoscope, was weak, but still sufficiently audible; the right side was less sonorous than the left; there was no expectoration; the pulse was weak, the belly slow. Next day the facies hippocratica was observed, the limbs were cold, and these symptoms continued during three days; the pulse almost insensible. The mind, however, was distinct; the patient was able to show his tongue, which was pale and slightly tumid; the voice was so weak that it could be heard only by placing the ear close to the mouth of the patient. The following day passed in the same state, and on the fourth day from his admission, the patient died, without any other indication of the nature of his disease, or any odour being perceived that could produce suspicion of gangrene of the lungs. The body being opened on the 13th of June, thirty hours after death, exhibited the lungs of the right side adherent to the diaphragmatic part of the pleura; more than the half of its base considerably softened, of a grey slate colour, and a gangrenous odour, falling to pieces by the action of water. This extensive softening arose from an intimate combination with a seroso-sanguineous liquid, of a fetid odour, infiltrated into the parenchyma of the lungs. In the parts where the alteration was less considerable, the most minute ramifications of the bronchia could be traced; in these the mucous membrane was of a slate grey, whilst in the large tubes it was merely white. The portions of the lungs which had escaped the gangrene were in a grey hepatized state, except that the parenchyma was more drenched with liquid than this degree of pneumonia usually permits *.

Efficacy of the Water of Cherry Laurel in Epilepsy. By M. MULLER. (Journ. Univer. des Scien. Med.)

A young girl, of 22 years of age, was affected for six years past with epilepsy, the attacks of which, without being quite regular, most frequently returned twice in the day; it continued only a short time, and in the inter-

* Rev. Med. Oct. 1826.

vals the patient had startings of the upper extremities, and convulsive motions of the fingers. During eighteen months she had been confined to bed, without the knowledge of her situation or actions, eating and drinking whatever was given to her, but asking nothing, and passing her excrements where she lay, if a vessel was not put under her. Numerous means had been employed without advantage, and the whole of them, especially copious bleedings, had seemed only to increase the disease. M. Muller was then called; he found the patient in the state above mentioned: She had menstruated regularly, and, according to the report of her father, had never had any other diseases but those of childhood, never any chronick eruptions on the skin, nor any affection of worms. The tongue was in a good state, and moist, the belly soft, the respiration natural. The author being unable to discover the cause of the disease, thought of employing the distilled water of cherry laurel, from the use of which he had already found great advantage in nervous affections similar to this: he therefore prescribed it in the dose of 20 drops per day. After the first ounce was consumed, the convulsive motions of the extremities had entirely ceased, and when 3 ounces more had been administered, gradually increasing the dose by 11 drops, until 80 drops were given at once, the epileptic attacks no longer returned. The patient having recovered her mental powers, left her bed, and performed all her usual functions. The treatment was terminated by an infusion of valerian, with the addition of the tincture of canella and spirit of hartshorn; and after having sometime longer made use of preparations of iron, this young girl recovered her usual state of health *.

The Remains of a Fetus found in the Scrotum of a Boy. By M. Fatti. (Journ. Univer. des Scien. Med. Nov. 1826.)

About eighteen months since, the daughter of a peasant of the environs of Braunau, in Austria, was delivered of a boy, who, at birth, presented a considerable tumour of the scrotum, which increased in volume as the infant advanced in age. M. Fatti, the surgeon of the place, resolved to open the tumour, which was 5 inches long, and about 2½ in thickness. The incision being made, the ribs, vertebral column, the two thighs as far as the knees, and the two orbits of a fetus, presented themselves. These remains were extracted. The child supported the operation well, and will be probably cured in a short time.

Observations on the effects of Medicines applied to the Skin, deprived of its Epidermis. By M. Lembert. (Journ. Univer. des Scien. Med.)

We have spread the most active medicines upon the surface of blisters, and in this way a great number of patients have been subjected to the action of emetics, purgatives, sudorificks, diureticks, local or general stimulants, antispasmodicks.

Amongst tonicks we have particularly chosen *quinine;* its action on the surface produced by vesicatories is a little irritating, ten minutes after its application the circulation increases, and a general heat is felt. The organs of respiration and digestion suffer no alteration; the nervous action and the locomotive power are augmented. Several paroxysms of a variable type have yielded to this mode of treatment.

The powder of digitalis and musk acted as powerful sudorificks; musk, particularly in exciting copious perspirations, had a singular effect in calming dyspnea, connected with the affections of the heart, or with an alteration of the nervous system of the lungs.

The acetate of potash, and the acetate of lead, excited abundant and repeated excretion of urine; but it is worthy of remark, that the acetate of lead readily dries up blisters, and the contact of the acetate of potash is very painful.

* Bul. des Sc. Med. Oct. 1826.

Kermes applied, even on a distant part of the thorax, has a very manifest action on the bronchia. It was necessary to employ the extract. The contact of squill in powder is so painful, that M. Bally has ceased to use it: We employ only the extract.

Strychnine doos not seem to act in a less quantity than a grain. Externally applied, it does not excite those great perturbations of the nervous system which make us dread its use. When it is given in a moderate dose, the paralyzed parts often recover their motions, without the rest of the patient being interrupted by convulsive starts. Its effects are seen in about two hours after its application. During this time the patient feels nothing unusual. It sometimes happens that the peculiar startings take place during sleep. If they are moderate, they do not awake the patient, and may take place without his knowledge. If they are violent, he awakes with a slight supra orbitary cephalalgia, which corresponds most frequently to the cerebral hemisphere of the side to which the application was made. This fact requires new observations. The spasms are without pain; they consist of motions of distention and retraction of the limbs. In some cases there are vermicular succussions, subsultus tendinum, partial and involuntary contractions. These effects continue from five to twelve hours, and most frequently leave a little stiffness in the parts affected.

During the action of the medicine, the pulse is accelerated about fifteen pulsations in the minute; the state of the pupils is much deranged; they are generally a little dilated. We had occasion to observe, that this substance employed internally, produced more headache and vertigo, but fewer contractions. Its external application succeeded very well with us in several palsies.

Aloes, the sulphate, the tartrate of potass and soda, colocynth, &c. occasion abundant stools, without irritating remarkably the digestive organs.

The tartrate of antimony and potass induced copious perspiration and stools, but no vomiting. It seemed to us to have a remarkable action upon the interstitial absorption; its topical effect was carried often to inflammation.

Daily experience having demonstrated the absorption of mercury upon denuded surfaces, we think that patients may be saved the trouble of frictions, by the application of a strongly concentrated mercurial preparation upon a large blister.

Morphia is one of the medicines whose external effects are most decided and most sedative.

Assafetida, camphor, musk, castor, succeed in the affections of the nervous system, characterized by the aberration of motion or sensibility. We remarked that morphia irritated surfaces less than its acetate, and that the same dose had different effects, according as it was administered externally or internally.

In both ways contraction of the pupils and cutaneous itching take place; nausea, vomiting, dysuria, or the desire of going to stool, constipation, eructations, disengagement of gas from the intestines, shivering, stammering, dullness, a restless haggard air, are phenomena that frequently follow the internal administration of acetate of morphia; this medicine given externally to the quantity of five grains has rarely produced the same effects. The sleep that follows its application to an accidental surface, is generally more calm and restorative than when it is thrown into the digestive organs. The sedative effect is more constant and complete; the imagination of the patients is rarely disturbed. From time to time cerebral affections are observed similar to those that supervene to a great quantity of wine. I have seen some patients in a state of hilarity, like that of the Orientals who make use of opium.

Coma never occurs from a moderate quantity; it is, nevertheless, proper to observe, that in phthisical patients, in whom consumption is much advanced, and in whom a reaction does not take place, but by means of a convulsive respiration and an increased circulation,—narcotism and pulmonary congestion are easily induced.

It is remarkable, that when a violent perturbation is brought on by too great a dose of acetate of morphia, patients contract great susceptibility of its action. This was very apparent in a patient, who, being treated for a considerable time by the acetate of morphia upon a blister, took two grains and a half of it without inconvenience, and at each time felt a complete suppression of sciatic pains. By mistake he swallowed a grain of acetate of morphia in a pill, and suffered nearly all the injurious effects of that medicine. Some days afterwards the external applications were renewed, and it was found that half a grain was sufficient to renew a part of the accidents. We have recently observed two cases of dysuria by the external use of morphia *.

Case of Volvulus or Iliac Passion, produced by large Calculi. By Doctor Ign. Porta. Translated from the Spanish, with remarks, by M. Julia Fontenelle. (Archives Générales de Medecine, November 1826.)

A lady of Barcelona, aged 50 years, of a phlegmatic temperament, of a weak and delicate constitution, long habituated to a quiet and sedentary life, and subject to frequent hystericks, was, on the 8th of March 1822, seized with an acute pain between the epigastrium and right hypochondrium, beneath the lowermost ribs. This pain was so violent, that it made her cry continually, and gave her not a moment's rest. The touching and compression of the affected part, added nothing to the intensity of the pain; the part was soft, and presented no tension. The tongue was clean and moist, there was no fever, the pulse a little weak, and no stools for twenty-four hours: *an emollient enema mixture, with liquid laudanum and Hoffman's liquor.*

On the 9th, the second day of the disease, as the remedies prescribed had no effect, a warm omentum of a sheep was applied to the painful part during the night†; immediately the pains became much more acute, without occasioning any tension, either local or in the lower part of the abdomen. The anxiety and restlessness were very great; no fever, pulse more concentrated, tongue clean and moist. The enema occasioned no stool. *Prescription; every two hours, a pill composed of four grains of assafetida, as much of castor, and a grain of the gummy extract of opium; liniment with oils of chamomile and amber; aromatick fomentation; application of another omentum; second enema injected in the evening, as well as the medicines above mentioned, and in augmented doses.*

On the 10th, pains less acute, nausea, especially in taking broth, which she vomited twice; the enemas were returned without any alvine dejection; the abdomen and pained part always soft, the same anxiety, no fever, pulse concentrated, want of sleep. *Two exciting enemas; antihysterick liniments; strengthening fomentations; antispasmodick mixture, with tincture of castor; another grain of gum-opium in pill.* In the evening, vomiting of all the broths; the most of these vomitings produced a great sense of heat throughout all the esophagus: the enemas returned without feces. *Two ounces of oil of sweet almonds; very soon afterwards, sweetened magnesia and antiemetick mixture of Riverius.*

On the 11th, vomiting preceded by hiccup and great anxiety; belly swelled, no stools, little urine, tongue dry, much thirst, shivering, a little fever, great concentration and debility of the pulse. *Three grains of musk in pills every two hours; enemas and liniments.* In the evening, MM. Piguilhem and Grasset are called. The vomiting ceases for four hours; nevertheless, the same anxiety, thirst and fever, as before; no stools. *Musk and tepid bath,* which procured a momentary relief.

On the 12th, during the night, the vomitings reappeared with more violence; their colour and fetid smell indicated the presence of fecal matter. The hiccup continued: the belly enlarged; no pain nor fever, pulse weak

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* Bib. Med. Oct. 1826.

† We have translated literally the mode of treatment, in order that the progress of sound practice in Spain may be appreciated.

and variable, thirst strong, tongue dry, neither stools nor urine. *Two grains of resin of julap and scammony, and half a drachm of extract of catholicum, divided into eight pills, one to be taken every two hours; an opiate bath and liniment.*

On the 13th,—*the whole dose of the former pills, and two enemas, with two ounces of laxative benedictum in each,*—neither stools nor urine. A bath, with slight relief. Vomitings continue. At eleven at night the patient is made to swallow four ounces of mercury,—*the same pills, enemas, and liniments;* neither stools nor urine all the night; vomiting of very fetid stercoraceous matter; the anxiety and hiccup were the precursory symptoms of these vomitings, which ceased with them. The thirst was very strong, tongue dry and foul; great concentration and weakness of pulse, extreme insensibility, want of sleep, and body almost cold. Injection of tobacco smoke into the anus during half an hour; *three grains of oxide of bismuth every two hours, and a grain of opium in the interval.* A short time after the introduction of the tobacco smoke, she had some rest, resumed a little heat, and the vomiting and other symptoms were relieved. This relief continued two hours, after which the patient went to stool, and passed plenty of urine; she felt something detach itself from the upper part of the abdomen, where she had first felt the pains. The vomiting entirely ceased, the pulse rose, the tongue became moist, the thirst was less violent, the belly soft and not painful, great inclination to sleep. Dr J. Lopez is added to the other physicians. *The same treatment except the tobacco smoke.*

On the 14th, a good night and sleep, no stools, but urine regularly, no more vomiting, pains of belly, bad taste, fever nor thirst, pulse regular, sweating, and moist tongue. *Broths frequently, diminution of the doses of bismuth and opium; an enema.*

On the 15th, liquid and bilious stools, which allayed the pains of belly; quiet sleep, abundant perspiration, pulse natural, tongue moist, no thirst, and a little appetite.

On the 16th, the pains of the belly returned, and disappeared after an abundant evacuation of feces, which, in place of the mercury administered on the 13th, presented a calculus of the form, colour, and size of a large chesnut. Its surface was smooth, obtuse at the two extremities, with a shred of membrane at the two sides, which left no doubt of its having adhered to the body by these two points.

On the evening of the 18th, another calculus came away with the excrements, similar to the first, but of an oval form, and of the size of a pigeon's egg: The patient increased in strength and appetite.

On the 19th, the patient passed, during the night, a third calculus, of a triangular figure, flattened, with obtuse angles, presenting a beautiful reddish colour at one of its angles, and of the same size as the second. It broke in washing, and exhibited the interior nucleus on which it was formed, and the different layers of its composition. Complete convalescence.

On the 20th, the mercury was evacuated, with a great quantity of feces, but without any other calculus; the cure was soon completed.

The chemical analysis of these calculi was made by Dr Balcells, Professor of Chemistry in the Faculty of Pharmacy of Barcelona; thirty grains gave him,

	Weight.	100 parts.
Cholesterine, mixed with a little green matter,	20 grains	66,666
Thickened bile,	5	16,666
White resinous matter,	4	13,333
Loss,	1	3,333
	30 grains.	99,998

Note by the Translator.

Intestinal concretions are much more frequent in animals than in man. Dr Marcet, to whom we are indebted for an excellent work on calculus, has rarely found them in the human species. According to the description of

them by that chemical physician, M. Lassaigne is induced to believe that intestinal concretions do not seem to form a peculiar species; the analysis, however, of some other chemists, all give different results. Thus, M. Thenard *(Memoires d'Arcueil)* has found them composed of the same principles as the biliary calculi, whilst M. Vauquelin (*Annales de Chimie*, tom lxxxi.) has referred their origin to a resinous substance.

Mr Brande has found these concretions entirely formed of carbonate of magnesia, in persons who daily made use of it, and Dr Marcet has found them of a caseous nature. M. Lassaigne, on the contrary, (*Journal de Chimie Medicale*, March 1825) has given an analysis of a considerable number of these calculi, that had been passed at different periods, along with the alvine evacuations, by a young girl, in the last stage of phthisis, and arrived at a state of the most complete marasmus; two parts were composed of,

1. Acid fat matter, formed of	Stearin in great quantity, Elain, - - - A peculiar Acid, -	74
2. Matter analogous to Fibrin, - - - -		21
3. Phosphate of Lime, - - - - - -		4
4. Chloruret of Sodium, - - - - - -		1
		100

We may easily recognise amongst these different analyses, that no identity exists among intestinal concretions, and that those analysed by Professor Balcells come near those of M. Thenard, but differ totally from the others, by the presence of cholesterine, which forms a third part of them.

But a curious coincidence is that which exists between the composition of the concretions of M. Balcells and a new kind of biliary calculi, found by M. Lassaigne in animals (*Journal de Chimie Medicale*, Feb. 1826), and which, by his analysis, are formed of,

Cholesterine, - - - - - -	6
Colourless Resin, - - - - - -	44,95
Bile, - - - - - - - -	3,60
Animal matter, and Green Resin changed,	45
	99,55

It would have been interesting if the mercury had been carefully collected, and after being washed, its loss, if any, ascertained.

Extract of the Flowers of Meadow Narcissus, used in the treatment of some Nervous Diseases. By M. Pourché, *Agrégé en exercise.* (Eph. Med. de Montp. Oct. 1826.)

Were it true that, in the practice of medicine, the necessary curative means could be reduced to the number of five or six, nothing could be more futile than the attempts made every day by respectable men to enrich it by new therapeutical agents, and to multiply their success. The history of so many medicinal substances, which, for a time, have produced flattering hopes, and have then fallen into disuse, may induce us to suppose the possibility of such a reduction. But judicious experience is far from thus permitting the annihilation of the materia medica, and if it often has to reject remedies which have been introduced by false observations, avaricious speculation, or ignorance, it sometimes irrevocably sanctions the indisputable and positive advantages of many others. Among the number of those in favour of which this experience has declared itself, I think we ought to rank the extract of meadow narcissus.

This narcissus *(Narcissus pseudo-narcissus, L.)* although known by the phy-

sicians of antiquity, had so little attracted their attention, that Dr Dufresnoy of Valenciennes is considered to be the first who has employed it. "I owe," says this author, "to a fortunate accident, the discovery of the virtue of a plant, from which, I have no doubt, that the greatest advantages may be derived." Repeated observations have proved to him that it is very useful in convulsions, tetanus, hooping-cough, and other nervous affections. Several physicians, particularly MM. Loiseleur Deslongchamps, Lejeime, Viellechèze, and Chrestien, have also confirmed the antispasmodic property of this substance, in cases where other means had failed. I have myself had occasion to collect facts which prove this; and as nervous diseases are sometimes so obstinate as to force us to employ many different medicines, I think it important to point out the effects of this, which has been very successful *.

Case I. *Neuralgia cubito-digital.*—Mr St. E., innkeeper, aged 45 years, of a nervoso-sanguine temperament, of extreme sensibility and irritability, was suddenly seized, on the 15th July 1824, with a violent lancinating pain, yielding to momentary pressure, and darting like fire along all the right cubital nerve, and its ramifications. A few hours after the attack of this pain, he felt a severe cephalalgia; the face was in a state of great animation, the respiration painful and hurried, the pulse hard and irregular, tongue dry, the agitation very great. During the following days, up to the fifteenth, a slight remission was observed in the morning, and a paroxysm in the evening, similar to that which I have just described. During all this time he could not lie down for a few instants, except when he was overwhelmed with fatigue; he no sooner fell asleep than he started up with pain, and was obliged to leave his bed and walk about in the apartment. On the 15th, 16th, and 17th days he was a little quieter; but on the 18th, the disease resumed its former intensity. The desperation of St E. during the pain, his constant watching, the unsuccessfulness of the means that I had employed, induced me to consult Dr Chrestien. Already I had employed general bloodletting, three applications of leeches, frictions with oil of cherry-laurel and opiate tincture, extract of hyoscyamus, and opium of Lalonette, internally; diluents, sinapisms, and a blister. This able practitioner was of opinion to persist in the administration of emollient vapours, and some grains of the extract of white hyosciamus.

Nothing produced the slightest diminution of the pain, nor the least change in the state of the patient. During more than a month he received the assistance of art in vain, and we were about to have recourse to the application of moxa upon the course of the nerve, when M. Chrestien recollected the antispasmodic property of the meadow narcissus. We prescribed it in pills, and in frictions on the affected arm. After ten days, a kind of eruption arose, similar to that produced by frictions with the *pommade d'Autenrieth*: from that time the pains departed, and the patient recovered perfectly his health and appetite.

Case II. *Frontal Neuralgia.*—C. R., wife of a baker of this town, aged 34 years, suffered, in the course of the year 1823, moral affections, that changed her strong constitution, and brought on frequent attacks of hysteria. A mild regimen, bathing, milk, whey, and especially the removal of her vexations, restored her to her former health; but such an extreme sensibility remained, that very little affected her mind excessively. In the month of March 1825, in the sequel of a nasal catarrh, which continued about eight days, she felt a tearing pulsative pain, without redness, heat, or tumefaction, proceeding from the bottom of

* Two distinguished chemists, MM. Charpentier and Caventou, have analyzed the meadow narcissus; the first found that it contained gallic acid, mucilage, tannin, extractive, muriate of lime, resin, and ligneous fibre; the second obtained six parts of yellow colouring matter, twenty-four parts gum, and twenty-six of vegetable fibre. Notwithstanding these labours, the true medicinal principle of these flowers is not yet known.

the orbit and the nasal fossae, and extending to the brow, and over all the left side of the face. This pain was accompanied with insupportable twitchings in the ball of the eye, with a very troublesome retraction of the upper eyelid, a sensation of pricking and dryness in the schneiderian membrane, a corrugation of the face, convulsive emotions of the left superior extremity, and general agitation. It had come on in the morning, and continued during four hours equally violent. During more than two months it returned nearly in the same manner, sometimes once a day, sometimes oftener. The actions of spitting, sneezing, coughing, and crying, instantly awakened her. The patient observed, that, on a first attack, if the paroxysm had not its usual intensity, she was tormented by severe pains until the return of another; but, on the contrary, if it was very violent, the interval between it and the next was passed in perfect tranquillity.

The examination of every thing relative to this disease will not admit of its being under the influence of rheumatism, gout, epilepsy, hysteria, suppression of the menstrual flux, &c. It existed without any complication; probably its predisposing and determining causes were the excessive sensibility of C. R. and the nasal catarrh by which she had been recently affected. To what, except sympathy, shall we refer the convulsions of the superior extremity, corrugation of the face, prickings of the nostrils, and general agitation? What is the nature of that imperceptible derangement, from which the lesion of the functions of certain nerves is derived? Does it proceed from inflammation of their neurilema, or their pulpy substance? Researches have sometimes found traces of it, (infiltrations, redness, granulations, ulcerations, &c.); but if we consider the therapeutic means that have most success, and the absence of all alteration in the greatest number of cases, can it be admitted generally that neuralgia is always an inflammation? Let us discard hypotheses, and keep to tentative, or experimental methods, which are alone useful and certain in the study of the physiology and pathology of the nervous system.

The principal indications to be fulfilled in the neuralgia in question, were, 1*st*, To diminish the general symptoms of irritation; 2*d*, To remove the acute pains, of which the ophthalmic nerve of Willis was the seat.

The means employed, according to the views of the first indication, were, the milk diet, bathing, veal broth, whey, emollient injections, to prevent the constipation that seemed to be occasioned by the constant use of milk, and other things necessary.

The second indication was at first accomplished by means of two applications of leeches, by exposing the suffering part to emollient vapours, by employing sedative cataplasms, opiate frictions, pills of opium, and extract of hyoscyamus. About the twentieth day of the affection, a sinapism applied to the brow rendered the following paroxysm more supportable. On the twenty-second a blister was applied to the same part, and often renewed by means of epispastick ointment. At this period the carbonate of iron, recommended by Mr Hutchinson, (*Medico-Chirurgical Journal*, 1820), was employed in the dose of two scruples, twice a-day; the irritation produced by it soon made its use be suspended.

The resemblance of the neuralgick paroxysms to those of local fever, seemed sufficiently exact to make us prescribe, for two or three times, the antiperiodic potion of Dr Chrestien: This curative attempt, made at the end of the first month, produced no benefit.

The blisters were, of all the means employed, those that most relieved the patient. This alleviation was, however, so slight, that she requested the section and cauterization of the frontal nerve, which I had proposed to her, should other less active means fail. Before having recourse to these surgical operations, I thought it proper to try the extract of the meadow narcissus, which had never yet occurred to me, notwithstanding I had seen it succeed in the preceding case.

I prescribed it internally, in the dose of six grains the first day; in the six following days, in the dose of nine grains; and, lastly, in that of twelve,

Frictions, with a watery solution of this extract, were made on the brow and temples. The flowers of the same plant, powdered, was also employed; it was introduced from time to time into the nasal fossae, and produced an abundant excretion of mucus. This treatment was begun nearly about the end of the second month. At the termination of three weeks, their periodical intensity was so much decreased, that they occasioned no complaint; they entirely disappeared two weeks afterwards, and the patient recovered excellent health, which she still enjoys.

Case III. *Sciatica.* Teissier, aged 47 years, formerly a soldier, consulted me, on the 6th October 1825, for a severe pain in the lumbar region, and along the right sciatic nerve, which he had had during a fortnight. Two years before he had had a neuralgia of this kind, which was very obstinate, and produced a slight emaciation of the right inferior extremity.

The present neuralgia, which had regular remissions and exacerbations, was accompanied with cramps, and a feeling of uneasiness and breaking. It had been occasioned by cold and moisture.

In order to have no doubt this time of the efficacy of the extract of meadow narcissus, I employed it at first, without the aid of any other means. Along with a soothing regimen, it was employed in frictions of a watery solution of the extract, small injections of the same solution, and six pills per day, containing each a grain of the medicine.

A few days after the pains became less severe, and the cure was soon completed.

Will it be said that the cure was spontaneous, and independent of the treatment? Doubtless not, if the obstinacy of the first attack be considered, and the rapid amelioration which followed the administration of the extract of narcissus in the second. For the rest, other cases besides the three that I have just related, leave no doubt on my mind of the excellence of this substance in the treatment of neuralgia; they agree perfectly with those which Dr Chrestien told me that he had collected.

Case IV. *Hemicrania.*—A girl, of 25 years, of the middle size, and of a frigid and irritable constitution, was subject, during two years, to a continual and violent pain, occupying especially the right parietal region, and extending sometimes over the whole head. During the paroxysms of this pain she had tinnitus aurium, with a kind of fluttering over the whole body, and the motions of the jaws became painful, on account of the spasm of the temporal, masseter, and pterygoid muscles of the right side. This girl, whom I saw at the end of last year, had not menstruated for about fifteen months: the disease had come on in the sequel of crosses and misfortunes which she had suffered.

The extract of meadow narcissus, taken internally, bathing, and a mild regimen, were the only means employed. At the termination of a month the nervous erethismus diminished; digestion and nutrition, formerly deranged by the sufferings, went on better; menstruation took place, and finally the hemicrania completely terminated.

Case V. *Chorea.*—A girl, the daughter of parents much affected with vapours, aged nine years, of a nervous and delicate complexion, was affected six months ago with the following symptoms: walking, and erect attitude, difficult, on account of the feebleness of the inferior extremities, especially the right; impossibility of carrying any thing to the mouth without excessive vacillations; continual motions of the head, face, tongue, and arms; appearance of stupidity arising from her look, and the disposition of the facial angles, which was only about 65 degrees; melancholy and agitated sleep.

Knowing the success of Dr Chrestien in the treatment of chorea, by the use of the meadow narcissus, and recollecting that which Dr Abribat and I had obtained on another occasion, I did not hesitate to try it in this case. The young patient first took four grains of it in the day, and afterwards ten grains. M. Loiseleur Deslongchamps asserts, correctly, that this dose some-

times produces vomiting: that symptom took place on this occasion, therefore it ought to be diminished. This treatment continued nearly a month, and produced a complete cure.

Case VI. *Epilepsy.*—Ann Carrieu had been attacked with this disease in her childhood. Her misfortunes brought it on again at the age of 27 years. When I saw her about ten months since, the fits were very frequent. The extract of meadow narcissus given internally, has contributed to render their attacks very uncommon.

Epilepsy is one of the diseases with which I meet frequently enough. Professor Lordert has employed for its cure the nitrate of silver with much success; I have also derived benefit from it. At present, however, in most circumstances, I prefer the meadow narcissus to that violent remedy; I say in most circumstances, because there are some in which a kind of intoxication is necessary, in order to produce a salutary change.

Not to extend the subject too far without necessity, I have given only a single case of each kind of disease, in the treatment of which I have employed the extract of the meadow narcissus.

By what mode of action is this medicine efficacious against diseases essentially nervous? With regard to this question, the opinion of M. Loiseleur Deslongchamps seems the most probable. "The utility of opium," says he, "in the same affections, proved by a crowd of observations, may induce us to believe that the narcotick virtue of the flowers of narcissus has a great share in the good effects obtained from them, and which seem to us worthy of the attention of practitioners."

Inoculation of Gonorrhea and Chancres. By Doctor F. Ribes, Titulary Member of the Royal Academy of Medicine. (Archives Générales de Medecine, September 1826.)

Several diseases, such as syphilis, &c., are contagious, and are never epidemick; but it is not yet proved that a great number of epidemick diseases are not contagious, or, at least, that they cannot be communicated in many modes from a sick to a sound individual.

The plague, an epidemick of the most alarming character, has been considered by most physicians as highly contagious. Men of great name, such as Stoll, &c. &c., have combated this opinion, but without being able to shake it. Several physicians of the present day have denied anew the contagious property of this malady, not by observations collected by themselves in the midst of the epidemicks, which have ravaged an immense extent of country, and cut off millions of individuals, but provided with materials extracted from professional books, in which are given an account of every plague whose history has reached us. They are persuaded that contagion was foreign to the propagation of this disease, and think that they have discovered the true cause that gave birth to this scourge of mankind.

It is just to state, that one of them, Dr Lassis, first presented himself, and opposed alone, during fifteen years, the opinion of the contagious nature of the yellow fever and plague. Although repulsed on all sides, he was not discouraged; he kept his ground, and at last made himself be heard. He then attracted young physicians to his side of the question. They liked his opinion, and adopted it. After having embraced it, they proceeded, in concert with him, in his defence; but they soon shewed themselves alone in the arena, thinking themselves strong enough to prove the non-contagion of yellow fever and plague. Doctor Lassis quitted the discussion for an instant, but he immediately re-entered the lists, and supported his system with all the vigour arising from an entire conviction.

Although I am not absolutely of the opinion of these gentlemen, I see that the discussion regarding one of the most terrible scourges that can afflict the human race, must be useful to science; and, if truth is on their side, our thanks will be truly due to them for the alterations which they will occasion

in the measures of safety, should the plague or yellow fever ever make their appearance on our continent.

The whole affair is now in the hands of the two commissions composed of men in every respect meritorious: let us await, with security, the judgment dictated by their prudence.

The vigorous manner in which the adversaries of contagion support their opinion, has excited the enthusiasm of many other physicians to such a degree, that it has induced them to think that even syphilis has no virus, and that it is not contagious.

Percy, a celebrated man, as much distinguished by his knowledge and understanding as by the services he has rendered to military surgery, thought quite differently from these gentlemen, when, in 1778, according to experiments made on man and on the lower animals, he proposed artificial inoculation of the venereal virus, as a fit means of rendering an old pox, which has long resisted mercury, more susceptible of being cured by the same treatment, which has several times failed.

Percy asks "If art would not derive great advantage from the new modification which a new virus, analogous, so to speak, with the old, might produce in the disease?"

Further on he adds, "In order to give a chronic pox a more suitable disposition for cure, it would be necessary to render it acute; it would be necessary to revive it, to restore it to its original type; in a word, it would be necessary to renew it: but the means of success? I hesitate, I dare scarcely articulate that which I employed. A new attack of this disease, the introduction of a new virus, since it must be told, the syphilitic inoculation, the only one which I believe capable of fulfilling this object." At a period now distant, Percy made many experiments upon animals, with the venereal virus both of chancres and gonorrhœa. He inoculated them with these, thinking at first only to discover the progress and phenomena peculiar to each; but he very soon persuaded himself, that, in trying to inoculate this disease, it might be possible to obtain the happy revolution produced by a natural contagion in two individuals, of whom he relates observations. They were affected by old pox, which had resisted every means employed, and which, after a new infection, was easily cured by mercurial frictions.

Percy went to pass the winter of the year 1778, with his family. He carried with him tablets upon which there was venereal pus, in a dry state, in order to continue his experiments in the calm of retirement. As the result of his trials, he relates only a single observation, but it is given with much care and detail. Some years since, Percy requested me to make, under his inspection, the dissection of several parts, which he wished to see, and of which he desired to have an exact remembrance, on account of a report that he was to present to the Institute. I profited by this circumstance to ask of him some explanations regarding the experiments that he had made on the soldier, the observation of which he had given, because I regarded dry pus as unsuitable to communicate syphilis. He told me that he was convinced that absorption and a new infection had taken place, by the insertion of the venereal virus; and that, finally, in consequence of that, the mercurial treatment had heen completely successful in his patient. He added, that, at the same period, and some time after, he had multiplied his experiments, and collected several conclusive observations, which left no doubt, not only of the possibility of the artificial inoculation of the venereal virus, but also of the changes which chronic syphilis suffers by this means. He promised to give me a note of the results of his researches; but Percy died without my having received the note.

I asked of M. Laurent, his nephew, if he had left any thing upon the inoculation of syphilis; and he assured me, that there was nothing on this subject amongst the papers of Percy. This work must doubtless have fallen aside. There remains, therefore, nothing more of his experiments on the inoculation of syphilis than the memoir which he communicated, at the time, to the Royal Academy of Surgery, and of which Fabre has published an ex-

tract in a work entitled, *Researches on different points of Physiology, Pathology, and Therapeutics*, tom. i. p. 320.

M. Cullerior's nephew believes also in the possibility of communicating syphilis by means of artificial inoculation. His opinion rests on experiments that he has made on this subject. He had the kindness, about a year ago, to give me an extract of his observations. I here present them verbatim:

"In 1811 or 1812, at the Venereal Hospital, I made the following operations on two patients:—On the first, who was a man of fifty years, attacked with rheumatic pains, which he, in mistake, thought depended on syphilis, I made, behind the glans, several punctures with a lancet, covered, on both sides of the point, with pus from recent chancres, untreated, and seated on the penis of a young man of twenty years; little blood appeared. I desired the patient not to touch the parts. From the fifteenth to the eighteenth day, the injured parts appeared red; then, upon two punctures, a circumscribed swelling was seen, raised into a point, which ulcerated at the top, and assumed all the characters of real chancres. There was strong inflammation of the prepuce, phymosis, inguinal swellings. A methodical treatment cured them.

"The second was a man of twenty-five to thirty years, affected with blenorrhagic ophthalmia. In him there was opacity and softening of the transparent cornea. I made an erosion behind the glans, with a lancet covered with pus taken from the same subject as for the former patient, by scratching the epidermis so as to uncover the corpus mucosum; and I applied the pus upon the skin deprived of its epidermis. The prepuce, brought forward over the glans, was left for two days in this state. The erosion penetrated all the depth of the skin of this part. The edges rose, the surface became ulcerous; finally, the presence of a real chancre could not be mistaken, and it was treated by the ordinary means."

In 1816, or 1817, a Spanish physician, named Lima Calderon, now practising medicine at Madrid, came into France, bringing, as he said, a preservative against syphilis. He addressed himself to the medical circle, to try experiments. A commission, composed of several members of that company, amongst whom were MM. Demangeon, Gardien, Capuron, came with M. Lima to the Venereal Hospital, to make experiments upon the preservative means proposed by the latter. M. Lima offered himself to be the subject of the experiments. He wished to inoculate himself, as he said, to prove that he was apt to contract syphilis. I brought a patient, affected with recent chancres, that had undergone no treatment. I took pus from these chancres with a lancet; and M. Lima inoculated himself, by making, behind the glans of the penis, an erosion on one side, and a puncture on the other. Two chancres appeared with all the characters of syphilitic chancres. He treated himself; and, after being cured, he repeated the experiment a second time, to confirm the first. The same result took place.

Doctor Capuron made a report to the medical circle of all that had taken place, in the name of the commission. I pass over in silence the final result of all the experiments of M. Lima, because that result properly is not a part of the present question.

It would seem, according to such positive facts, and according to those which are found in books of medicine, that new experiments or observations would be superfluous, and that the question is truly determined. But, even now, I just learn that M. Jourdan has published a work, in which, they say, he proves incontrovertibly, that syphilis has not really any virus, and that this disease is not contagious *. The opinion of M. Jourdan has great weight with me. I know that he is very learned; that he desires and loves the truth. Not knowing the facts, however, upon which he rests his belief, I cannot yet admit his manner of seeing things. However things may turn out, and without, at present, prejudging the question at issue, I think that the case which I am about to relate is not entirely void of interest; and, if my senses have not deceived me, I own that I know no other more fit to make us believe in the existence of the venereal virus, and its contagious quality.

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* Since the publication of the present paper, an apology for M. Jourdain has appeared in t' journals, in which it is asserted, that he only denies *the existence of a virus*; but admits the cont gious nature of syphilis.—Ed.

Case of Inoculation of Gonorrhea with Chancre.

Mr Peter Francis B. a military invalid, aged forty-three years, of a very irritable temperament, had been wounded in the left leg, by the bursting of a howitzer, in 1793. His wound had suppurated much; and, during seven years that it had been cicatrized, his health was always bad; he had severe headaches, spasms of the breast, suffocations, and painful digestions, which frequently forced him to go into the Infirmary, under the care of M. Andral senior, then assistant physician at the Hospital of the Invalids. In this state, that invalid was seized with a venereal gonorrhea. When he entered the Infirmary again, on the 26th December 1808, he had had that running for three weeks. The patient, already suffering much, was bled; he drank whey and infusion of linseed. From the 1st to the 3d of January the running increased; there was great pain in the urethra, and accompanied by great headache. Leeches applied to the perineum brought no relief to the patient; the running continued the same; the headache, besides, became insupportable; and, on the 5th, a violent ophthalmia took place. At the same period, the ophthalmia seemed epidemick in the Hospital of the Invalids; for we had in the Infirmary, in both the medical and surgical wards, fifteen persons affected with the disease. On the 6th, twenty leeches were applied to the temples; the patient had an emetick; and a blister was applied to the back of the neck. On the 7th, his sufferings continuing, ten leeches were applied round the eye-lids, and he had a foot-bath. Neither the ophthalmia nor gonorrhea had suffered any change, when, on the morning of the 8th, the left knee became painful and swelled. From this time, the running diminished by degrees. On the 11th, the gonorrhea ceased entirely, and all the other affections became worse; the ophthalmia, swelling, and pain of the knee considerably increased. Recourse was had to bleeding in the arm, and to the application of leeches round the eye-lids and knee; baths, emollient cataplasms, drinks, and soothing collyriums, were employed up to the 18th, with success. As experience has already taught me, that most frequently the pains and accidents produced by the suppression of gonorrhea, are soothed and cured by the use of the balsam of copaiba, I proposed the employment of it: this was consented to, and the patient took a drachm of it morning and evening, but he vomited it each time, a little after it was taken; no more was given him. Supposing the essence of turpentine might answer instead of the balsam of copaiba, we determined to make him take twenty drops in the morning, as much at mid-day, and the same in the evening; he could not continue the use of it neither. M. Robillard then proposed, according to the opinion of M. Yvan, to inoculate the patient with gonorrhea. We then tried this means, and the first attempt was made on the 22d of the same month. On the 26th, we perceived a slight oozing from the canal of the urethra; this oozing was so small, however, that we were convinced we had not completely succeeded. The patient was suffering excessively, and M. Yvan, who was at St Cloud, was requested to come to see him; he advised to renew the inoculation, resting his opinion on two analogous cases, in which he had succeeded in recalling the discharge; the operation was consequently again performed.

We had, at the same time, in the Infirmary, another invalid affected with gonorrhea, and who had also chancres on the corona glandis; his prepuce, elongated, swelled and thickened, formed a phymosis, that prevented the orifice of the canal of the urethra being seen. The chancres and gonorrhea furnished a very abundant discharge; and it was scarcely possible to procure one of these fluids, without its being mingled with the other. On the morning of the 27th, I directed a bougie into the urethra of this invalid, to about the distance of seven inches; I withdrew it, well impregnated with pus, and immediately introduced it completely into the urethra of our patient. Although the presence of the bougie caused him much pain, he did not withdraw it for a quarter of an hour. M.M. F. Boyer and Salmade *junior*, assisted me in this

little operation; but, notwithstanding all the care that we had taken to procure only the gonorrheal fluid, some pus from the chancres was probably mixed with it.

We saw, on the 29th, a considerable discharge of pus from the urethra; and, from that day, the discharge continued. On the 31st, things remained in the same state, but the sufferings were diminished. On the 1st of February, the left eye was less inflamed; the right was in the same state as before; the knee was less swelled, but the inner part of the thigh was very painful. From the 2d to the 6th of February, the gonorrhea discharged abundantly, and all the symptoms occasioned by the suppression were much diminished. But, on the 7th, the patient perceived a little pimple upon the lower part of the glans, beside the frenum. We examined it on the 8th, and recognized a small well-marked chancre. During the 9th and 10th, the patient continued to go on well, except that the chancre not only remained, but progressively enlarged in depth and length. Mercurial frictions were proposed, but the patient would not consent. On the 12th, two other little chancres appeared, accompanied by pains in the groins. The patient, on the 15th, submitted to the mercurial treatment. On the 16th, he began the friction with a drachm of Neapolitan unguent. In the evening of the 18th, a violent colic prevented the second friction. From thence the patient continued the frictions every second day, without interruption; he increased the dose to thirty-six drachms of mercurial unguent, without the least appearance of salivation. At the fourteenth friction, the ophthalmia, swelling of the knee, and chancres, had disappeared; but the gonorrhea continued to run for five months after the treatment, and it terminated of its own accord.

This patient, who permitted the operation of gonorrhea only with much difficulty, was in great wrath when he saw the chancres; and now that he enjoys good health, at more than sixty years of age, he nevertheless preserves still a little resentment against us.

Intermittent Palsy of the Tongue. (Archives Générales de Medecine, Nov. 1826.)

Doctor Vallot, of Dijon, sends a note relative to some cases of intermittent palsy of the tongue, which he has taken from the *Treatise on the Plague*, by Laurence Joubert, and which seem to him to have been disguised fevers, that might have been cured by cinchona. In two cases, the patients were not paralytic, except at the new moon; they spoke with facility when the moon was full. In another case, the patient, during fourteen years, could speak only from twelve to one each day. MM. Itard and Chomel think that M. Vallot is too hasty in considering these affections as febrile diseases; they might depend on cerebral congestion; and indeed M. Itard has seen a woman who was dumb at each period of menstruation.

Observations upon the Causes, Symptoms, and Treatment of Derangement of the Mind, founded on an extensive Moral and Medical Practice in the Treatment of Lunatics. By Paul Slade Knight, M. D., formerly a Principal Surgeon in the Royal Navy, many years Surgeon of the Lunatic Asylum of the County of Lancaster, &c. &c. *Together with the Particulars of the Sensations and Ideas of a Gentleman, during his Mental Alienation; Written by Himself during his Illness.* 8vo, pp. 168. London, Longman & Co. 1827.

Dr Knight is a shrewd practical man, and of more observation than many who have devoted themselves to the department in which he has been engaged. He has treated many hundreds of lunatics; and, by the present work, impresses us with a very high idea of his skill and discrimination. At this

distance, we can merely discover from his work, that some difference has arisen between him and the managers of the Lunatic Asylum, and we sincerely wish, that these gentlemen may have been successful in filling his place with a medical officer of the same energy, talent, and judgment. Dr Knight believes that insanity scarcely ever originates from moral causes.

"Insanity, like some other diseases, may have for its origin a moral or a physical cause; either an affection of the mind, or a disorder of the body. The moral impulses, however, very rarely produce insanity, and this is also the case with regard to religious feelings. I come to this conclusion, because, of nearly seven hundred cases of insanity that I have sedulously treated, I have only *once* ascertained, with that clearness which I think the subject required, namely, unquestionable proof, that either a religious or a moral cause produced the disorder. 'Tis true, I have frequently been informed, that this and the other person became religiously insane, through following some sect not connected with the narrator's persuasion; but, when it has been possible to get an intelligent history of the person, I have uniformly found, that the individual had betrayed at least equivocal symptoms of insanity; and that derangement of the mind, though not palpable, had obviously existed before he became a raving devotee; and doubtless, from this state of mind, has arisen that proneness to change his mode of worship, so frequently noticed *in him*, who is what is termed religiously insane,—not that change in his worship has caused his insanity, as has been, I think, erroneously stated; but that the incipient insanity has caused the fickleness in devotion, together probably with an unusual fervour, which, if urged on by an erroneous zeal, as it too often is in these cases, may, and doubtless very frequently does, assume the impression given to it,—whether that be of the usual gloomy cast, or whether it be of a lively amorous character, as I have sometimes seen it. As this latter is rather a rare species of what is termed religious insanity, I shall make a few extracts in illustration of it, from one of my journals, which I fortunately possess:—October 11. 1823. Elizabeth A——, a lusty young woman, admitted this day. October 17.—She pointed out to me the 5th chapter of the Ephesians, and said she was reading an exhortation to love; her manner and expression of countenance corresponding to the sensual import of the passion. Another time she pointed out the 2d chapter 5th verse of Solomon, and, with voluptuous expression, quoted these words: "He took me to the banqueting-house, and his banner over me was love." She was always talking on religious subjects; and she had hymn-books, wherein the passion of love was too warmly pourtrayed, as I conceive, to be suited to its professed object: many of these she had by heart, and would sing to the tune of profane airs, with all the expressions of an amorous passion.

"How it has happened, that, in my practice, of nearly seven hundred patients, the malady of *only one was ascertained to be undoubtedly the effect of a moral cause*, I will not attempt to decide, though I may endeavour to account for it.

"I presume my means of gaining information were on a par with those which occurred to other persons. When I was precluded the advantage of actual observation, printed queries were transmitted to the medical person, certifying the insanity, and also to the relatives or acquaintances of the patient; and although both the medical persons, and others, were frequently very ready to assign a religious or moral cause for the disorder; yet, on a closer investigation, it turned out that they were either not acquainted with the patient, so as to notice if his actions or language were altered, before the derangement of intellect obviously developed itself, or they disclosed circumstances that manifestly indicated an aberration of intellect, long before the excitement of a religious or moral cause gave it an impulse, and a decided character, too clear even for ignorance to mistake. I consider, therefore, that religion and the passions very rarely indeed *cause* insanity; but, on the contrary, that an over zeal for religion, or a violent excitement of some one of the passions, is frequently the inevitable result of the corporeal affections:

by which affections the mind is constantly influenced in the insane, as well as the sane, part of mankind."—P. 32–36.

The passions, contrary to Esquirolle, he also deems *very rare* exciting causes of mania. That they sometimes become such he proves by two instances.

"I once witnessed a very whimsical origin of the passion of pride, which bears immediately on this question. One of my patients, William Y., who, on general subjects, possessed a most retentive memory, had forgotten that this is not the age of miracles. It chanced that one William Faulkner, a quiet, inoffensive, meek, and rather melancholy lunatic, was placed in the same range of apartments with Y., who took an early opportunity to question me respecting this *personage*, as he called him. I told all I knew about Faulkner. He eyed me with suspicion and derision; and, after a short pause, he said, "If you don't know, sir, I do. I have repeatedly told you, that I had seen his Majesty's person in the clouds, in broad day-light, when I was walking the streets of Liverpool. (It was true he had repeatedly mentioned this.) "Of course," Mr Y. continued, "a phenomenon so extraordinary excited my astonishment, and roused my attention. I now understand wherefore this vision was vouchsafed to me. The features were too strongly impressed upon my mind ever to be forgotten; and this personage, who, for some diabolical and traitorous purpose, is called William Faulkner, is no less than his Majesty; and it is impossible, sir, but you must be well aware of the fact." So saying, in the most respectful and distant manner, bowing to the ground again and again: as he approached, and sidling round, that his back might be at no time towards *the presence*, he greeted W. F. with "I most humbly but sincerely hope, your gracious Majesty is well," bowing again to the ground. His gracious majesty cast a look of curiosity at his very humble and loyal subject, regarded him a moment, and then quietly and meekly resumed his walk. His subject, however, had a suit to prefer; and, following, bowing, scraping, and sidling round, which produced a very comical effect, he entered on the history of his cruel and unjust confinement, counting the weeks, days, and even hours, he had been confined, which he could always do; and concluding, by most humbly, but most earnestly, beseeching, that his gracious Majesty would peremptorily order his liberation. During this address, which was well spoken, I observed the drooping William Faulkner gradually draw himself up; and, at the conclusion, to my astonishment, he replied, with an air of dignity, rather bombastic, "My good, good fellow, I am sorry I can be of no use to you,—my enemies confine me here." "But, if your gracious Majesty would be only pleased to direct to this person," pointing to myself, "your royal order, under your sign-manual, the gates would at once fly open." "My man," his Majesty replied, "you are mistaken; I am, I tell you, confined here by my enemies; and I cannot at present, in this place, command any thing. I sincerely wish I could help you, but I assure you it is out of my power;" so saying, he walked off, with all the air and dignity imaginable; pride took possession of his breast, and, to the day of his death, he called himself a king."—Note, p. 23, 24, 25.

"Some household concerns induced a mother to leave her infant without any competent person to attend it. On her return, the shrieks of the infant made her rush to its protection: it was writhing on the floor dreadfully burnt: she sprang forward, and, with her hands, crushed the flames. Here was a horrid spectacle!—the infant was dead, and the mother deranged."—P. 35.

On the whole, madmen are not passionate, and, speaking collectively, they rarely exhibit feelings; and he appeals to the testimony of those gentlemen who almost daily inspected his hospital, in which he treated, at different times, 700 patients.—P. 25.

In lieu of these imaginary causes, Dr Knight has scarcely ever found insanity unaccompanied by one or more corporeal diseases. In detecting these, no reliance must be placed upon the maniacs themselves, who always conceal their diseases.

In the treatment he is averse to much bleeding; but considers digitalis and hyoscyamus as the best sedatives. He gives 20 or 25 grains of the extract of the latter. The pilulae hydrargyri, the circular swing, and the tepid bath, also come in for their share of praise.

In the moral treatment, exercise, amusing easy games, music, and mild treatment, are among the chief means recommended.

"I have known this apparently trivial error in moral judgment produce raging and ungovernable madness. To me it appears equally absurd; and I know it to be equally prejudicial, to reason, as it is called, to argue with the lunatic, for the purpose of convincing him of his hallucination. Many a well-meaning person, confiding in the clearness of his reasoning faculty, may be seen combating the false perceptions of the peaceable lunatic; for it is with the peaceable only, that these sage persons enter the lists; they never venture to engage with the turbulent or the excited, although frequently the saner of the two. The peaceable lunatic becomes first a tranquil and willing auditor, till finding *his* understanding insulted, by the evidence of *his* senses being either absolutely denied, or boldly questioned, he becomes indignant at the barefaced assurance that would impose on him as truth, that which the evidence of *his senses*, perhaps anxiously and repeatedly examined, tells him to be false. It will be found most prudent, and most conducive to the patient's recovery, to permit the accuracy of these insane perceptions and morbid ideas to go unquestioned, and perfectly unheeded, to carry the lunatic's attention to a very different subject, and to fix it as much as possible on that which has no relation to the hallucination."—P. 71.

"*Notes extracted from my Journal of Practice of Physic, September* 7. 1823.——George Fillingham, the fiddler, has been this hour past playing on his violin, in the large south yard belonging to the men. There are fifty-five patients in the yard, in whom every description of insanity is exhibited, *except the incipient delirious stage.* They are all perfectly tranquil, with the exception of Thomas Hyde, and he is fully as tranquil as at any other time, and is evidently much pleased with the music. All the other patients are chatting in groups, or sitting or walking alone; and most of them are keeping or beating time with the hands or feet. During the time I have been writing this note, not one patient has offered to interrupt me, though at other times they always crowd round me, and are frequently exceedingly troublesome."—P. 100.

Of religion, writing, or any difficult study, he disapproves as a means of cure. On an average, Dr Knight thinks, that he is borne out in assuming, that nine out of ten recent cases will recover, if managed conformably to the rules he has laid down for the moral and medical treatment of such cases.—P. 131.

There are two great literary curiosities in this work: several sets of games at draughts, composed by a madman, who beat every one that came to see him; and an account of the recollections of a person who recovered from insanity under Dr Knight, and who is the recorder of his own reminiscences. The latter is not perhaps of much authenticity; but the former demonstrates that difficult, recondite combination, and the discovery of new ideas, are perfectly compatible with insanity.

A Table of Diseases Treated at the Carlisle Dispensary, from February 1st 1826 to February 1st 1827. Communicated by THOMAS BARNES, M. D.

	Remained Feb. 1. 1826.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Jan. 1827.	Total.
Abortus,				4		1	3	2	1	2	3		1	17
Ambustio,		2	3	2	4			1	1		1	3	3	20
Amaurosis,	2	1		1							1	1		6
Amenhorrhoea,	2	1	6	3	5	2	4	1	3	2	2	1	4	36
Anthrax,		1		1		1			1	1				5
Aneurisma femoralis,				1										1
Aphthae,			1			2		2	2				1	8
Apoplexia,											1	1		2
Asthma,	4					2	2	2	1	3	2	2	2	20
Ascites,		1	1	2		2		1	1		1	1		10
Anasarca,	2	1	2	1	4		3	1	2	3	1	2	3	25
Bronchocele,		1	2	3	2	1		2						11
Cancer mammae,								1						1
Catarrhus,	11	19	11	19	19	14	16	9	6	9	19	13	27	192
——— senilis,		3	2		1				1				3	10
Cancer oris,	1	1	1		1	2				2	2			10
Concussio cerebri,		3			1						1			5
Constipatio,	14	14	32	22	14	27	21	9	23	16	16	19	14	241
Colica,	2	9	1	6	8	2		5	2	2		1	4	42
Cholera morbus,		3	7	5	4	13	5	39	14	4	1	7	2	104
Chorea sancti viti,											1			1
Contusio et vulnus,	8	8	4	12	10	10	8	9	6	6	13	5	10	109
Cephalalgia et vertigo,	4	8	10	17	18	26	14	12	12	11	5	9	3	149
Cynanche parotidæa,				1							1			2
——— tonsillaris,				1		2	1		4	2	1			11
——— trachealis,				1								2		3
Cystitis,			1				1	1						3
Diarrhæa,	10	24	16	17	23	9	12	18	11	11	12	7	16	186
Diabetes mellitus,	1													1
Dysmenorrhoea,								1						1
Dysenteria,		2		2	1	1	2	10	3	4	2	4	4	35
Dyspepsia,	20	16	21	11	20	11	13	8	13	11	9	5	15	173
Empyema psoadicum,				1	1									2
Ephidrosis,				1										1
Epilepsia,	1			1	2	1	1				2		1	9
Erysipelas,		2	3	1	4	2	2		2	3	6	2	1	28
Enteritis,			1	3	1		2							7
Epistaxis,				2										2
Fractura,	3	2	3	1	1	2	2	1						15
Febris continua,	5	9	17	10	4	3	12	2	6	7	16	13	6	110
——— intermittens,			1	1		1	1		1	1		1	2	9
——— remittens,	3	10	4		4	9	13	7	5	1	3			59
——— lactea,		1										1		2
Fistula in perineo,											1			1
——— in ano,								1			1		1	3
Gastrodynia,	1		1		1	5	6	4			2		1	21
Gastritis,				2		1	1							4
——— a veneno saturnino,												1		1
Gonorrhoea,		3	3	4	2	1	2	2	1	4	1			23
Hernia,		2	2	2	2	3	2	2	1	2	2			20
——— humoralis,					2		1		1			1	2	7

(*Table continued.*)

	Remained Feb. 1. 1826.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Jan. 1827.	Total.
Hæmorrhois,	1	1	1		3	3	3	2			1			15
Hæmoptysis,		1	2	2	3	1			2	1			1	13
Hæmatemesis,							1					1		2
Haemorrhagia intestin.,				1										1
Hysteria,	1	2	2	6	4			1	1		2	1	2	22
Hydrops ovarii,	1													1
Hypochondriasis,			3		1	1	1				1			7
Hydrocele,									1					1
Hydrocephalus,			1	1		1	3		1					7
Hydrothorax,	1		1	1		1								4
Hepatitis,		1		1	1	2	1	1	1					8
Hydrarthrus,			1		1		1			1		1	1	6
Icterus,		2		1	3	2			1				1	10
Ischuria,			1			2	1			2	1	1	1	9
Lithiasis,	1		1	1									1	4
Leucorrhoea,					8	1	3		2	1	1	2		18
Luxatio,		1				1			2				1	5
Laesio cordis,													1	1
Menorrhagia,	1	4		3		1	2	2	1	2	1	2	1	20
Mania,			2	1					1			1	1	6
Melancholia,	1													1
Marasmus,		2	1	2	2	4	1	1	3	3	1	1		21
Morbi cutanei,	4	12	31	19	29	17	9	8	19	8	9	20	28	213
Necrosis,			1										1	2
Nephritis,										1				1
Odontalgia et dentitio,	1	9	14	30	22	14	21	11	12	13	10	31	22	210
Ophthalmia,	5	8	8	8	14	12	10	10	9	6	2	4	8	104
Otorrhoea,							1						2	3
Otitis,				1		2	1			1			1	6
Phlegmon et abscessus,	3	12	6	9	12	3	2	3	7	6	12	11	12	98
Pleurodyne,		6	4	1			2	1				1		15
Paralysis,	1		1	1	1		1						1	6
Prolapsus ani,			2	1		1	1					1		6
——— uteri,			2		1							1	1	5
Paraphymosis,											1			1
Ptosis,	1													1
Polypus meatus auditorii externi,								1						1
Phthisis pulmonalis,	13	6	5	4	9	5	4	2	5	7	4	3	3	70
Pernio,				3					1					4
Pneumonia,	2	5	9	11	4	12	5	12	6	3	2	11	5	87
Phrenitis,							1					1		2
Pertussis,	6	9		4	3					1				23
Pyrosis,					2	1								3
Porrigo,	2	1	7	4	2	8	5	1	1	5	5		7	48
Paronychia,					1	2						1		4
Rachitis,			1	1										2
Rheumatismus acutus,			2	2	2	3	1			1	1	1	1	14
——— chronicus,	9	12	2	5	8	6	3	4	4	6	2	3	1	65
Rubeola,					1			4		1			3	9
Ranula,				2				1					1	4
Scrofula,		1		1	3		1	2		1				9
Syphilis,	1			1	1	2	1			1			1	8
Subluxatio,									2		2		1	5
Spinalis morbus.	1		1		2	1	1							6

(*Table continued.*)

	Remained Feb. 1. 1826.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Jan. 1827.	Total.
Scarlatina,					1					1	1	6	5	14
Tetanus,			1											1
Tympanitis,			1							1				2
Tic douloureux,			1		1	1				2	1		1	7
Tenesmus,						1								1
Tumor pericranii,							1							1
Ulcus,	5		8	8	6	8	7	5	2	4	3	6	3	65
Urticaria,	1				1			1	1	1				5
Varix,				1										1
Vomitus,					2	3	2	4			1	1	1	14
Vermes in intestino nidulantes,		3	10	2	9	9	4	9	6	2	2	7	4	67
Variola,													1	1
Varicella,					4	10	6	7	9	3				39
	156	245	289	300	326	297	257	246	224	192	195	221	251	3199

Patients remaining on the books, Feb. 1. 1826,		-	156
Of whom were cured,	- - -	147	
——— relieved,	- - -	3	
——— irregular,	- - -	1	
——— died,	- - -	5	
		156	
Patients recommended and registered since Feb. 1. 1826,			3043
Of whom were cured,	- - -	2744	
——— relieved,	- - -	42	
——— irregular,	- - -	13	
——— died,	- - -	71	
Remaining on the books, Feb. 1. 1827,	-	173	
		3043	
Children inoculated for the cow-pox,	- -		200
Total,	- -		3399

The case of small-pox admitted in January, was a boy nine years of age, who brought the disease to Carlisle from Castle Douglas. He had been at the latter place in December, and slept in a low lodging house, in which there were some patients labouring under small-pox. On the 1st of January, about ten days afterwards, he came to Carlisle, and became affected with the disease. He had been vaccinated in Ireland some years before, but had not taken the regular vaccine disease. There were no marks upon his body. He had a high degree of fever, and a large crop of pustules, which were distinct. It is remarkable enough, that although there are several unprotected children in the neighbourhood of his lodgings, and since his recovery he has been frequently with them, and has gone about various parts of the town with his parents begging, no other person has yet taken the disease. Measles have been sometimes brought to Carlisle in the same way, and have not spread in the town. Two of the cases admitted in January were children of the name of Hall, who caught the infection at a village in Ayrshire, where measles prevailed much, and were very fatal. The mother of the children had gone thither on a visit to some of her friends, and had taken her

children with her. The disease made its appearance on the 6th January, about three weeks after their return to Carlisle. The third case was a little boy, three years old, who lived in the same house with them. He took the disease a few days afterwards, and no more cases have occurred since.

Kirronosis observed in an Embryo of Three Months. By Professor Dubrueil. (Eph. Med. de Montpell. *Aug.* 1826.)

The severe scrutiny and spirit of investigation which at present distinguish the labours of pathological anatomy, secure the advancement of this science, by causing alterations long observed to be better known and appreciated, and by pointing out those which seem to have been neglected. Among the latter is the *Kirronosis, a disease of the embryo and fetus, characterized by the yellow colour of certain tissues.* It was reserved for Professor Lobstein to be the first to make the discovery, or, at least, to give the description of this affection. In two embryos, which he first made use of in proving it, the pleura, peritoneum, and arachnoid membrane, were the seat of a yellow colour, without, however, the tissue which connects the serous membranes to the adjoining parenchymatous organs being altered in its colour. The colour of the skin was natural.

Much later, that able anatomist found, in the same state, the serous membranes of two twin embryos in the fifth month of pregnancy. Thinking the kirronosis inherent in the serous membranes, he was surprised to find the yellow colour, not only in the parts annexed to the spinal marrow, but in the spinal marrow itself, and the great sympathetic.

Being engaged in osteogenous researches in an embryo of three months, sent me by my colleague, Professor Delmas; on opening the cavities, I was struck with the yellow colour of the serous membranes. I immediately recollected the memoir of Professor Lobstein, and, by the circumstance before me, I was easily convinced of the existence of kirronosis.

This case, which I publish, although having some resemblance to that of the Professor of Strasburgh, differs from it in some respects.

The skin was of a natural colour. The facility in the embryo of separating the dura mater from the arachnoid membrane, presented the former in the usual state; the arachnoid which covers the cerebral hemispheres was of an ochry yellow, except at their internal surface, where the serous membrane was of a greyish white; it preserved the same aspect, going from one hemisphere to the other, and covering the place which afterwards the *corpus callosum* was to occupy. I had recourse to the microscope, in order to judge better of the state of the arachnoid. The glass that I used multiplied the diameter of the object 36 times. I perceived membranous folds, and arborizations distinctly indicating the passage of the vessels. Being persuaded that the serous membranes have few or none, I thought I was deceived by an optical illusion. I again examined the arachnoid without the microscope. I ascertained that I had the pia mater along with it (the brain presented yet no appearances of convolutions), and I recognized the vessels of this membrane, which had caused my mistake.

Seen by the microscope, the arachnoid membrane was not yellow through its whole extent, but it seemed dotted; it had the appearance of very fine ochry-coloured sand, thrown here and there upon a grey ground. With regard to the mass of the encephalon, it presented nothing remarkable.

The spinal arachnoid was yellow, but with a tinge less deep, towards the lower part of the dorsal region, and in the lumbar, as is seen in the plate. The spinal marrow was every where of its natural colour, a reddish grey. The pleura, and especially the right costal and pericardium, evidently presented the colour of kirronosis.

The peritoneum covering the abdominal parietes, was more yellow than that covering the intestinal tube. This latter did not present that tinge until near the termination of the ileum, and in the colon of the left lumbar region. The parenchymatous organs were in a sound state. One remarkable circum-

stance is, that none of the great cavities contained serous matter in their interior.

The serous membranes, however, were not here the only tissues attacked by kirronosis. It extended to some of the muscles, the trapezius, splenius, complexus, serratus magnus, and those which occupy the hollows of the vertebrae. The yellow colour was generally more apparent upon the anterior than the posterior part of the muscles.

By a remarkable symmetry, that which was coloured on one side of the body was equally so on the other. Thus, on the lateral parts of the neck, that species of fibro-cellular sheath, called *fascia cervicalis*, was seen of a yellow tinge; the same colour was observed on the internal jugular, the carotid artery, and the *pneumo-gastric nerve*, surrounded by this sheath. The thyroid gland was yellow externally. The conical portion of the great sympathetic of the left side was of a greyish-white; the cervical ganglions were red. The thoracic portion of the nerve, stript of the pleura, was yellow; the same colour was less prominent in the right great sympathetic. Long immersion, and repeated washings, did not remove from the different parts this yellow tinge, which seemed fixed in them.

It would be erroneous to suppose, in the present case, that the yellow colour arose from the bile being carried to these tissues. Great praise is due to the recent and excellent chemical analysis, by which we can attribute to the modified state of the blood, altered in some diseases, the yellow colour by which they are characterized. This idea had already occupied my attention, before I had any knowledge of the researches of MM. Firtz, Breschet, and Desmoulins. When in the West Indies, I was a witness of an epidemic yellow fever. In the small number of examinations of the dead body which it was possible for me to make, I found almost always the liver and its appendages in a sound state. It was then necessary to find another cause to account for the bilious suffusion over all the skin. As melanosis, arranged before M. Breschet among the organic alterations, called *degenerescences*, and now admitted as a morbid secretion, is a kind of deposite of fibrine and the colouring matter of the blood, both in a peculiar state; may not kirronosis be also the result of some unsound modification of the constituent parts of the blood, perhaps of the colouring matter directed upon the serum?

M. Chevreul has shewn that, in the blood of new born children that have sunk under icterus, with hardening of the cellular tissue, the blood separates into two parts; the one, the clot, formed of fibrine and red colouring matter; the other, the serum, which, far from being colourless, as in its ordinary state, contains two colouring principles.

M. Authenrieth has also remarked, that the serum of the blood becomes yellow in diseases free from every bilious complication.

It suffices that I present exact anatomical details, without venturing farther with regard to the nature of an alteration which has its seat in systems so remote by their mode of organization, of an alteration, I say, which may not, without forced analogy, be exactly equivalent to any known disease. Each period of our existence is then marked by affections peculiar to it. May the facts of pathological anatomy be one day sufficiently numerous and well proved, to furnish materials for the pathology of the different ages!

On Galvanism, with Observations on its Chymical Properties, and Medical efficacy in Chronic Diseases. By M. La Beaume, Medical Galvanist, Surgeon, Electrician, Consulting ditto to the London Electrical Dispensary, Gratuitous Electrician to the Bloomsbury and Northern Dispensaries, F.L.S. &c. Small 8vo. Pp. 272. London, Highley, 1826.

We have some apprehension that the staunch lovers of the good old order of things will feel almost as much shocked at the long string of qualifications by which M. La Beaume introduces himself, as if he had sent a volley from his revolving galvanic battery through their aristocratical bodies. But we would advise such persons to be temperate in their manifestations, as

our friends the phrenologists would say; seeing that every one who loves improvement, or compassionates the sufferers from aches and kibes, will not easily be persuaded that a good "surgeon electrician" is not better even than an idle or stupid surgeon general; and that an active "*ditto* to the London Electrical Dispensary" is worth all the unemployed pioneering M. Ds. with which that metropolis is reported to abound. We think well of M. La Beaume and his inventions; and though, perhaps, our opinion of the latter may not rise quite so high as his own, this is no uncommon case between authors and reviewers. M. La Beaume has great faith in the medical efficacy of galvanism. After an experience of twenty years in its exhibition, nine of which have been passed in London, he thus sums up its merits, at p. 28.

"I do not assert that galvanism is an infallible *remedy* for every case of disease to which it is applicable, nor that the occasional use of gentle medicines is to be superseded. But I most positively affirm, that such is its sanative powers in the deranged functions of the digestive organs, that it has, in numerous instances, effected the most extraordinary cures, after the failure of every other internal and external means, which had been most judiciously prescribed and perseveringly used, under the direction and superintendence of the ablest practitioners. As galvanism is a natural excitant, its effect on the human frame is not like that of ardent spirits, and mineral stimulants or tonics, which are generally temporary. The recovery which has been obtained by the galvanic course, has, in the greatest number of cases, been lasting. These facts, which I boldly state, can be borne out by the testimony of a number of respectable individuals of unquestionable veracity, in different classes of society, who have experienced the permanently beneficial effects of galvanic agency, in the cure of obstinate and complicated disease, which had baffled all other efforts of the best medical treatment." P. 28, 29.

In the style of this passage, or the orthography of the title page, if the acute reader detect some traces of that country which our immortal Lyrick could not behold without hailing—

> ——— Tu beata Gallia
> Salve bonarum blanda nutrix artium,
> Orbem receptans hospitem, atque orbi tuas
> Opes vicissim non avara impertiens!
> (Fratr. Fraterr.)

we beseech him to consider how difficult it is to convey our ideas with propriety in a foreign tongue. In his account of diseases, M. La Beaume bears evidence to the good effects of galvanism in several cases of dyspepsia, and other disorders of the stomach. The following singular story has the merit of being short.

"In another instance, I was called in by a physician to a patient, who was apparently dying; he informed me, that her stomach was in a state of collapse, occasioned by a violent inflammation of that organ! and requested a trial of galvanism, which I administered with such immediate good effect, that a repetition was not deemed necessary!" P. 43.

The most useful thing we find in his book, is the revolving galvanic battery, which is both contrived to augment the galvanic power, and to continue it for a great length of time without any fresh excitation. This is effected by the very simple means of "combining a metallic and a semimetallic substance with another less oxydable metal, the surfaces of which are acted on by one or two mineral acids diluted with pure water. The power and duration obtained by these means are very great. It is not only capable of increased power, but, by a simple contrivance, *it perpetuates its action to almost any length of time*, for a succession of operations. These advantages are obtained by the shape and position of the plates; for instead of being square and stationary, as in the common battery, they are circular, and made to revolve on an axis, (furnished with a handle), at the will of the operator. As only one segment (sector) of the circle is used at one time, four different operations may be effected in each revolution of the entire circle, without the trouble of wiping any part of the apparatus. A constant stream of galvanic fluid may thus

be exhibited almost *ad infinitum;* and the unpleasant effluvia arising from the addition of acid, as in the common mode, is prevented." P. 251. See Pl. II.

We infer, from page 12, that the oxydable metal is zinc, the semimetal mercury, the less oxydable metal copper. On the whole, we think the work we have been examining an useful manual to those who wish to employ galvanism in the cure of disease.

PRACTICE OF SURGERY.

Kirronosis—Conclusions with the Yellow Journal.

Our controversy with Dr Macleod has come to a close. The learned editor seems now to admit, that more noise was made about the affair than it merited; that his notice, in November, was a vile puff, and a puff malign, combined with a very false representation of the nature of the contents of our Journal; and that our frightful omission of the words "London Medical and Physical Journal," might amount to piracy, but cannot be construed into plagiarism, as he had asserted. Silence is consent. We consider these points, then, as settled, and should not have again noticed the subject, but to assure the publick, and among others Dr Macleod, that his number of December had not arrived, and could scarcely, indeed, reach us before our January number was printed and sold, else we are more sincerely men of peace than to have riddled the Doctor in the way we were tempted to do in our last number. We speak in a dialect with which, no doubt, he is well acquainted. The Doctor is, after all, "a *goodish* sort of man;"—for he never does any body a mischief but he has an apology in full preparation to issue along with it; and which, of course, quite blunts the sting of the mischief. Thus, when he and his publisher advertised us in the Chronicle, and paragraphed us in their journal as plagiarists, it was "out of no bad feeling." When he asserted that the half of our division, entitled "original papers *and communications from various channels*," (which title the Doctor, doubtlessly "with no bad feeling," has chosen to travesty into "original department,") was "*almost entirely made up from other works;*" and a sad contrast to the immaculacy of the Medical and Physical Journal:—this also he enacted, "begging respectfully to say to his brother editor, that he had no bad feeling whatever towards him!!!" In the number for February, he suspects our veracity, enters deeply, and luckily for our interests with the publick, unintelligibly, into a criticism upon the arrangement of the articles in our Journal (an important, novel subject, and a disinterested judge to be sure!); but the stern denunciations of our imbecility are here again softened down by an assurance, that "it is not our custom thus to dissect the productions of our contemporaries!" This "temperate and gentlemanlike manner, so entirely void of any thing bordering upon vulgarity,"—is also visible in the following little piece of chronology, to which we dare venture to hope the courteous Doctor will not refuse to append his subscription.

Oct. 1. 1826. Appeared the papers of Messrs Bell and Shaw in the Edinburgh Journal of Medical Science.

Oct. 25. 1826. The MS. "plagiarism" of Dr Macleod's number for November, delivered to the Messrs Adlards, printers, Bartholomew-close.

Oct. 25.! 1826. Advertisement for the November number of Dr Macleod's Journal, with charge of plagiarism, sent to the Chronicle Office.

Oct. 25.!! 1826. Letter written, by proprietors, to Edinburgh editor: by which *management* no opportunity for his explanation, or disappointment of their puffs, could possibly take place.

Oct. 27. 1826. Advertisement, complaining of plagiarism, appeared in the Morning Chronicle.

Oct. 29. 1826. Said letter delivered in Edinburgh.

Oct. 29. 1826. Said letter answered from Edinburgh, nearly as in Dr Macleod's version. It promised to grant all that was asked, "to explicitly acknowledge the source whence he obtained these articles, in his very next number."

Oct. 31. 1826. The answer was delivered in London to Dr Macleod; *before* Nov. 1. 1826, the ostensible *date* of publication.

Nov. 3. 1826. The London Medical and Physical Journal for November came to hand.

Dec. 1. 1826. The following conciliatory notice appeared in the London Medical and Physical Journal. *(This on the Editor's authority.)*

"We have received a letter from the editor of the Edinburgh Journal of Medical Science, and are perfectly satisfied with his explanation. *We were not aware!* at the time of noticing the mistake, that the proprietors of the Journal had written to him on the subject, otherwise we should not have noticed it. More importance has been given to the circumstance than it deserves."

Whether the fumes of Christmas danced "too early and too long" in the heads of our bibliopoles about this joyous time, we cannot say; but one thing we can MOST SOLEMNLY AVER, that the numbers of the Physical Journal for December 1826 and January 1827, never came into our possession, nor were ever read by us, else we should gladly have "backed out" of a quarrel, the provokers of which, notwithstanding their simultaneous and tripartite attack, seemed willing then to afford us an opportunity of retreating from it, *after they had accomplished their object.* But it is vain now to regret what, after all, was only strict retribution for the unneighbourly eagerness of our friends in London; and though we begin to think more highly of ourselves, from the efforts they make to injure us with the public, yet we do not anticipate any similar act of temerity from that quarter in future. The burnt child fears the fire; and, somehow or other, when a man is bent on mischief merely, all his good arguments and tropes forsake him. Conscience extinguishes his natural gleam of talent, the more easily as it is more slender—and his unsuccessful effort, like a dead serpent, lies powerless and detested.

> "In thy felonious heart though venom lies,
> It does but touch thy blundering pen, and dies."

A Syllabus of Surgical Lectures on the Nature and Treatment of Fractures, Diseases of the Joints, and Deformities of the Limbs and Spine; containing Descriptions of the Modes of applying Twelve New Apparatuses, Illustrated by Twelve Plates; with Cases, shewing the Advantages arising from the Plans of Treatment recommended. By J. AMESBURY, F. S. A., F. L. M. S. Surgeon to the South London Dispensary, &c. 8vo. Pp. 146. London, Underwood, 1827.

THE above is a barren outline of the author's lectures, which may, however, be very useful to the pupils who attend the latter. A good teacher always appears to great advantage when he allows his pupils to prepare themselves for his instructions, by previously reading on the subject.

The plan pursued by Mr Amesbury seems to have nothing very particular to recommend it; but it is at the same time copious, and free from any evident fault. Neither is his mode of bandaging, or his apparatus, entitled to much praise in point of novelty. They seem substantial, and we do not hesitate to affirm, that the success of which he speaks, is much more to be attributed to his own steadiness, address, and acquaintance with the subject of fractures, and the usual sources of failure, than to any mechanical merits of *his* apparatus, of which, like a thousand other inventive surgeons, he appears enamoured.

It was a happy idea to add drawings and detailed descriptions of his apparatus to this syllabus. Few medical students can draw; and the few who are adequate to the task, are often particularly averse to the labour of delineating surgical contrivances—"because they are ugly." Mr Amesbury's deviation from the usual method of a syllabus, will therefore serve usefully to refresh the memory of his prelections, and peculiar artifices, to his pupils in after life.

Case of Inguinal Hernia, in which the operation was performed without opening the Sack. Treated by Mr Travers at St Thomas's Hospital.

January 21. 1816.—John Iliff, ætat. 21, admitted, with symptoms of incarcerated inguinal hernia, gives the following account of his complaints:—Has had a rupture on the left side from his infancy. He wore a truss for many years, but this having been broken, he neglected to procure another; and from this time the hernia has generally been down. It was always, however, reducible, and could be returned by moderate pressure; this he used to effect by crossing his legs, and pressing them strongly together. On one occasion, this attempt produced considerable pain, and proved ineffectual; it was then reduced by a surgeon.

Yesterday evening, when running violently, he fell; the hernia came down, and he was unable to return it. It increased in size, and became painful. A surgeon who was sent for bled him twice, and tried the taxis without effect. Cold was then applied to the tumour, but the patient passed the night in pain, with constant vomiting.

On his admission, the tumour was tense, of a pale red colour, not very tender to the touch. It distended the scrotum considerably, the testicle being situated at the inferior and most convex part; it was very moveable. The swelling felt partly elastic, like intestine distended with flatus, while other portions communicated the doughy feel of omentum. The neck of the hernia was proportionally thick, and it appeared to lead, with very little obliquity, into the abdomen. Stretching across between this and the hernial tumour, a tense band was distinctly perceptible to the eye. He complained of slight pain in the belly, which was relieved by pressure; his pulse was small and quick, with some hardness; his countenance extremely anxious. No stool since the hernia came down.

The taxis was tried, and persisted in for four and twenty minutes without avail; he was then put into a warm bath (110°), and the attempts at reduction continued. In fifteen minutes, being very faint, he was removed from the bath. Having recovered from this state, a pound of blood was taken from the arm by a large orifice; a tendency to syncope supervened, and the taxis was again had recourse to, but without success. He was now placed in bed; a freezing mixture was applied to the scrotum, and a tobacco clyster was administered, (oz. ss. to lb. ss.) This was soon followed by nausea, and great general debility and distress. The taxis was once more put in practice, and again failing, general pressure was applied to the tumour, and persevered in for half an hour, with a view of lessening its bulk by expelling the contained flatus. These means proving ineffectual, and the symptoms of incarceration continuing undiminished, the operation was had recourse to at one o'clock.

An incision, commencing a little above the external ring, was continued for about three inches down the tumour, and through the common integuments. The superficial fascia, which was rather thickened, being next divided, exposed that part of the tendon of the exterior abdominal muscle, which passes from one pillar of the ring to the other. This had a distinct semilunar figure, and explained the appearance described before the integuments were divided. This formed a partial stricture, and was divided in an oblique direction. An attempt was then made to return the hernia, but another stricture was found to exist higher up. A director was next passed under the superior pillar of the ring, which was cut by a straight incision. After this had been effected, gentle pressure was made upon the tumour, and

the hernia rapidly ascended, without the necessity of opening the sack. The patient expressed immediate relief. The wound was closed by a stitch and adhesive plaster; he was replaced in bed.

Ten o'clock evening.—Vomited immediately after the operation; slept some hours. No stool; no pain in the abdomen, but complains of pain about the chest, and scrobiculus cordis; pulse quick; skin hot.

Enema purgans statim et ol. ricini, ℥ss. quarta quâque hora donec, &c.

22*d*, *nine o'clock*, A. M.—Has slept well. Two copious evacuations. Pain in the chest continues, and is attended with cough, which causes the hernia to protrude; abdomen easy.

23*d*, *morning*,—Complaint of the chest increased; slight pain in the abdomen; skin hot; bowels confined.

Mittatur sanguis ad ℥viii.

Sulphat. Magnesiæ ℥i.; Mist. Ammoniac. acet. ℥ss.

quarta quâque hora.

Evening.—No motion; in other respects as before.

24*th*.—Much better; two evacuations; wound dressed; looking well.

Pergat.

February 8th.—Discharged cured. (To wear a truss.)

Two Cases of Malignant Pustule. By PERROUD, D. M. P. (Annales de la Médecine Physiologique, Sept. 1826.)

SIR, *Villefranche*, July 24. 1826.

I HAVE the honour to address to you two cases of malignant pustule, treated with success by local antiphlogistics. The malady, in the first case, taken at the commencement, was arrested very easily, by which, indeed, I was surprised in reflecting on the character of the disease; for, as it is considered by authors as depending on a cause denominated specific, it ought to have yielded only to agents of the same nature. Emboldened by this success, I did not fear, in the second case, although the disease was at the maximum, to oppose it in the same manner, and to neglect all the means, hitherto so extolled, especially cauterization, which, in this case, would have been fatal to my patient, by depriving him of the motions of the hand, if I had injured the tendons of any of the fingers. I do not speak of antiseptics; the uselessness, and even danger of them, is easily seen here. This last fact may serve as a companion to that published by M. Gendrin, in the *Bibliotheque Medicale*, and so highly spoken of by M. Bayle, in his *Memoire sur la Fievre putride et gangreneuse*, inserted in the *Revue Medicale*, April 1826; a fact in which an ill-directed antiphlogistic practice was followed by a treatment excessively tonic, with complete success; but with chances and accidents so various and extraordinary, that in this circumstance one may admire the efforts of nature in struggling against the disease and the remedies. I am, with consideration, &c. PERROUD, D. M. P.

CASE I.—M. a tanner, aged 28 years, of a strong constitution, caused rings to be put in his ears, about three months since; a slight oozing continued from the right lobe. On the 24th of April 1826, when he awoke, he felt a violent pain in the affected ear, extending to all the corresponding side of the neck; the lobule is red, swelled, stiff, as if emphysematous; a small greyish pustule is seen upon the upper part of the opening, through which the ring passes; the tumefaction of the lobule, which is considerable, is continued into the intermaxillary space; the countenance is pale and depressed; the tongue white, with want of appetite; pulse hard and frequent. The patient had, the evening before, been handling the skin of a cow that had died of some bad distemper, and had probably carried his dirty fingers to the small wound of the ear. The ring is removed, which procures relief. Twelve leeches are applied round the ear; emollient cata-

plasms are kept on the affected parts; the patient is put on the antiphlogistic regimen, and barley-water is given for drink. These things were done in the morning, and, in the evening, by an abundant bleeding from the leech-bites, the pain and swelling were much diminished; the blackish spot extended no farther. Fainting having come on, the flowing of the blood was stopt; and the patient feeling hungry, he was allowed some light soup.

April 25th. The lobule of the ear is returned to its natural size; the dark pustule has left below it a slight excoriation; a slight swelling still remains in the intermaxillary space; the functions are in their natural state; the emollient applications are continued, and a light regimen observed.

26th. The patient having recovered his usual health, wished to resume his labour, but this brought on a considerable swelling of the parts with pain; simple emollient applications, however, put all right again in a few hours, by procuring a very copious sero-sanguineous discharge. The patient prudently did not resume his ordinary occupations until three days after.

Case II.—A shepherd, aged 40 years, was stung in the fields by a large fly, on the back of the left hand, the 19th June 1826. He immediately felt a sharp pain, followed by a tickling, which caused him to scratch the part; he removed the little pimple that had formed in the evening, and the hand swelled a great deal without much pain. The patient continued to go out to the fields; but, on the 23d and 24th, the swelling of the hand and arm rose to the very highest degree, and I did not see him till the evening of the 24th, for the first time; left alone in a stable to his sufferings, he was lamenting bitterly. His hand was swelled to an enormous size, and presented on the back two irregular greyish spots, of the size of a two-franc piece. The arm and forearm, excessively swelled, were of a shining red, and sprinkled here and there with phlyctaenae of a lemon colour. There was great pain of head, excessive heat and thirst, dry brown tongue, pulse full, rapid, and hard. The countenance shewed the anguish which the patient suffered. Finding it impossible to give this wretched man any aid where he was, I caused him to be brought to our hospital, about the distance of a league. At his arrival, thirty leeches were put upon the hand; the arm and fore-arm were surrounded with cloths wet with a decoction of flowers of marshmallow and sambucus, which was to be equally applied to the hand after the leeches had come off. I prescribed lemonade for drink, the antiphlogistic regimen, and a potion with fifteen drops of laudanum.

June 25th. The patient has had some moments of rest; the pain and swelling, although less, are still very great; the tongue is whitish and shrunk, without dryness; pulse quick and hard. (Fifteen leeches round the hand, and ten to the epigastrium; prescription as before.)

26th. The leeches have opened the phlyctaenae; nothing but serous matter has flowed. There is much pain, but more softness in the affected parts. (Fifteen leeches on the back of the hand; prescription as before.)

27th. The leeches have bled well; the night was quiet, the hand, arm, forearm, much reduced; pain greatly diminished; the fingers are moveable, which they were not before; general heat, and pulse natural; appetite for food. Sloughs have formed on the parts occupied by the greyish spots when I first saw the hand. (The limb to be still wrapped in cloths soaked in the water of marsh-mallow and sambucus; lemonade to be given, and soup three times a day.)

28th. The phlyctaenae remove and leave the cutis bare; a slight oozing, without deep excoriation. (The same prescription.) The hand, fore-arm, and arm, become by degrees of their natural size; the two sloughs on the back of the hand separate by degrees; the dressings are of lint soaked in muriate of lime.

July 7th. A very painful swelling takes place in the elbow, but ten leeches being applied, and emollient cataplasms, it is soon removed. From time to time the limb is bathed with water of marsh-mallow; the sloughs separate, and the cicatrization goes on; the motions, at the same time, are performed with facility.

24th. The whole is cicatrized. The regimen had been augmented from day to day, and the patient, eight days after admission, walked about the wards with his arm in a sling.

This is another example of an eating ulcer cured by the antiphlogistic method. Let us constrain those who are obstinate in shutting their eyes against the benefits of the physiological doctrine, to own, that external sloughing ulcers are incurable only, when the irritation repeated in the principal viscera has rendered them improper for the exercise of their functions.

B.

An Essay on Cupping, &c. &c. By Charles Kennedy, Surgeon. 8vo. Pp. 63. London, 1826.

Mr Kennedy has taken out a patent for the cupping apparatus described in this work; which consists,

1*st*, Of a cup, the bottom of which screws in like that of a bone punch ladle, and has a pencil appended to its inner surface, carrying a sponge dipped in spirits.

2*d*, Of a *graduated* receiving cup, into which the exhausting cup is to be inserted when emptied of its blood.

3*d*, Of the common scarificator.

If the assertion we here copy be correct, though we confess our doubts of its accuracy, there was indeed great need of improvement, but no necessity for that improvement being secured to the inventor by a patent.

"Not a public teacher in London makes mention of it (cupping) in his lectures, and there are many young men who have gone through a five years' apprenticeship, who have, as it is termed, walked the hospitals, and actually entered on the career of the profession, without ever having seen this operation performed." P. 10.

The brief extract subjoined, will put our readers in possession of the most valuable part of Mr Kennedy's production, the manipulation of his apparatus.

"The blood rushing to the part, distends the vessels, causes a tumefaction, and a degree of pain to be experienced. To remove the glass, turn the screw, the air rushing in will allow it to fall off gently into the hand; apply it again by lighting the sponge as before, and let it remain on a minute or two, during which time take off the chill of the scarificator by rubbing it on the palm of the hand; then turn the screw, hold the glass in the left hand, carry the scarificator under the glass, and spring it on the tumour *before you allow it time to subside.* This is the only part of the operation that requires any particular dexterity, and may very easily be acquired: if the nurse, or any one near, be allowed to turn the screw, by taking hold of the glass yourself, and keeping the scarificator ready in the hand, this part may be a little more expedited. When this is done, and the screw of the glass made tight, apply it as before, and the blood will be seen flowing into it. As soon as a sufficient quantity of blood is procured, or when coagulation is beginning to take place, remove the glass immediately, or the operation will be defeated by the coagulum stopping the mouths of the capillaries. On removing the glass, place the *graduated cupping receiver* under it, lift the glass upwards, and let the blood descend into the receiver; bathe the part with flannel, wrung out of hot water; and, if the sponge is not touched with the blood, apply the glasses immediately—but should the sponge be soiled, take the one in reserve, and wash the other, so as to have it in readiness for another application.

"The quantity of blood taken by each glass, will average about three ounces. Proceed in this manner till the quantity required is drawn; and, after the operation is over, wash the part carefully from all coagulated particles, and apply either the adhesive plaster, or the common white ointment spread upon linen, to the wounds." Pp. 27—29.

Comparative frequency of Varicocele. By a Correspondent.

The left spermatic vein, in most instances, empties itself into the renal vein of the same side. In all cases, whether the latter passes before or behind the aorta, the violent pulsations of this great vessel, aggravated by the pressure which it often bears, from contraction or flexure of the abdominal muscles, from distention of the stomach or intestines, with their natural contents, must tend to obstruct the return of the blood, by the spermatic vein, from the left testicle. There will thus be generated a great tendency to varicocele in the left testicle, and this is fully confirmed by experience.

Moreover, the left iliac vein, in its passage to join the common iliac trunk, and ultimately the ascending cava, is subjected to great pressure, from the constant accumulation of feces which takes place in the sigmoid flexure of the colon, and rectum; and thus there is, in like manner, a tendency to varix generated along the whole left side of the limb. This disposition is also fully confirmed by experience.

A dispute concerning the relative prevalence of this disease in the two limbs having been agitated, the following Table, which may be worthy of a place in your Journal, was handed me as a correct report of the occurrence of varix, in each of the two limbs, in the recruits rejected at the Castle of Edinburgh, during a period of nearly six years, for that disease. It will be seen that varicocele is about twenty times as frequent in the left, as in the right testicle; and varix about three times as frequent in the left as in the right side. P. Q.

		1817.	1818.	1819.	1820.	1821.	1822.	Total.
Number of recruits deemed *fit* for the service,		521	466	401	729	402	528	
deemed *unfit* for the service,		140	148	169	198	227	184	
Of these deemed *unfit*, the following were rejected for *varicose veins*, viz :—								
Varicose Veins.	Of the right testicle or spermatic cord,	2	3				1	6
	Of the left testicle or cord,	13	23	12	43	10	24	125
	Of both testicles or cords,		1		1			2
	Of the right leg,	4		3	6	9	6	28
	Of the left leg,	7	12	17	14	11	7	68
	Of the right leg and right testicle or cord,							
	Of the left leg and left testicle or cord,		5	4	4	2	2	17
	Of the right leg and left testicle or cord,		1	2			1	4
	Of the left leg and right testicle or cord,							
	Of both legs,	14	8	12	13	8	5	60
	Of both legs and testicles or cords,		1					1

On Division of the Veins in Varicose Ulcers. By M. Lisfranc. (Revue Médicale, November 1826.

If the success of chloruret of lime against simple ulcers, properly so called, cannot be doubted, it is not the same with varicose ulcers. The truth of this last proposition has been more than once demonstrated by experience. Not only does the liquid just mentioned fail almost always in ulcers complicated with dilatation of the veins, but it produces, when it does succeed,

cicatrices of so little resistance, that, if one may employ the expression, they are ruptured by *nothing*. The object, then, of the practitioner should be, to make this dilatation cease, and consequently to obtain the obliteration of the superficial veins of the limb. For this purpose, different operations have been tried, from the days of the Father of Medicine, till those of Celsus, and from those of the latter till the time of Fallopius. Puncture*, extirpation, destruction of the varicose tumours by the application of the actual cautery†, ligature of these tumours‡; laying bare a section of the saphena, for one or two inches, with ligature of the two ends§; section of the vessel between two ligatures‖, tapping this vessel, compression with a plate of lead¶; these are the whole operations.

Having fallen into neglect since the time of M. A. Severinus and Fallopius, they remained so till the time of Home, an English surgeon. He restored the use of the ligature to his country. Beclard was amongst the number of those imitators who first revived it in France. A short time after this the latter made the section above the ligature; often without laying bare the vein, he cut it along with the skin, with one stroke of the bistoury, and then tied the lower end.

The success of Beclard induced M. Lisfranc to make the section of the vein; but he soon gave up that to prefer the double section of the vessel, at the distance of about two inches, without ligature of the extremities. This preference rested on the principle, that the sides of the vein being often hypertrophised, and enveloped in a fatty cellular tissue, on that account the extremities produced by the division remained open in the solution of continuity. As soon as the section was made, the atmospheric air rushed into the cavity of the venous canal, and a horrible phlegmasia succeeded the entrance of this fluid, a dangerous inflammation, which, becoming general, destroyed the individual in less than twenty-four hours. And, what is very astonishing, the inflammation shewed itself even before the application of the first dressing. The double section of the vein was much more fortunate. Since M. Lisfranc has practised it, a great number of patients have been operated on without any accident. This practitioner avoids the ligature of the extremities, in the fear of the inflammation which may arise from it. He prefers a slight compression beyond the solution of continuity.

The success of the operation depends solely on the formation of a coagulum in the saphena, which keeps up the ulceration. Accordingly, we may easily conceive, that the double section of this canal would be employed in vain, if by anastomosing branches it communicated with the deep veins of the limb. In this case, the circulation continuing in the vessel would prevent the coagulation of the blood. Before we begin, then, it is of the highest importance to ascertain that the saphena has no inosculation with lateral branches. This being proved, the operation is performed at the inner side of the knee, more or less close to the upper extremity of the tibia, the common point of union of all the superficial venous branches of the leg being below the inner tuberosity of this bone. If the trunk of the saphena is varicose, as far as the articulation of the knee, this state is almost always coincident with chronic inflammation of the parietes of the veins. Now, in order to avoid the danger of operating on a vessel already unsound, in order not to excite a dangerous inflammation, M. Lisfranc, in this case, performs the double section of the vein on a sound portion of it, for example, at the inner side of the thigh; with the precaution, however, to operate very near the inferior extremity of this limb, and, therefore, as far as possible from the principal venous trunks, and central organ of circulation. The ulcer is sometimes kept up by both the outer and inner saphena; M. Lisfranc then performs the double section of both vessels. The ulcers especially occupying the anterior part of the leg present this disposition.

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* Hippocrates. † Celsus. ‡ Ætius.
§ Paulus Ægineta. Albucasis. Avicenna. M. A. Severinus. Fallopius.
‖ Amb. Pare, Fabricius. ¶ Dion.

We have said, that the success of this operation requires that there be no lateral branches joined to the saphena; the following is a proof of this assertion. In a woman affected by a large varicose ulcer in one of her legs, M. Lisfranc performed the double section of the saphena below the knee. The cicatrization was complete; but, at the termination of a few days, the solution of continuity reappeared. Immediately above this opening, it was found that the saphena was not obliterated; a pretty large anastomosing branch had continued the circulation between the deep and superficial veins. The surgeon of La Pitié performed the section of this branch, and the ulceration did not return.

In the varicose ulcers that have their seat over fatty tissues, the section brings on the cicatrization much more slowly than in solutions of continuity, without alteration of the living solid. Besides, the pseudo-membrane formed upon irregular tissues is soon ruptured. All the efforts, then, of the practitioner should, after the operation, have a tendency to bring back the altered parts to the physiological state. It is, especially, in the sequel of the formation of accidental tissue, that indurations and callosities are most successfully opposed.

Case.—Tellior, aged forty years, of a lymphatico-sanguine temperament, was admitted to the Hospital of La Pitié, on the 10th of November 1825. He had upon the inner side of his left leg a varicose ulcer, as broad as the palm of the hand. The disease had existed several years; it was accompanied by numerous varicose veins, and considerable callosities. All the means generally employed had been used without success. On the 15th November, the double section, of an inch and a half of the inner saphena, was performed; the extremity of the upper portion alone gave out a pretty large quantity of blood. A slight compression was employed above the solution of continuity, and union took place by the first intention.

16th. The state of the patient is good, the ulcer pale, there is no pain over the track of the vein. The same prescriptions.

17th. The upper end of the vein is a little painful and hard; twenty-five leeches are applied over the track of the vein, and emollient cataplasms moistened with laudanum. The same regimen.

18th. The inflammation is no better; twenty-five leeches are again applied.

20th. Traces of inflammation still exist; twenty-five leeches are applied; the emollient cataplasms, and the same regimen are continued.

21st. The inflammation is entirely gone. The cataplasms, regimen, and emollient drinks are, however, continued. The ulcer is red, the suppuration good, and the cicatrix is beginning.

25th. The patient being very well, he is allowed food. The wound has closed well. From this day to January 22d, every thing has gone better and better. The cure is complete. The patient remained only some days after the entire closure of the wound, and left the hospital on the 27th of January.

But the cicatrix being on parts covered with callosities, and not having had time to become sufficiently strong, re-opened after some days of labour, and Tellier was obliged to return to La Pitié, where he was not allowed to move. A small number of leeches was applied every two days to the callosities, and likewise emollient cataplasms. By these means, and by chloruret of lime, twenty-five to thirty days were sufficient for the closure of the wound. Notwithstanding his cure, he did not depart until the end of March. Since then, the patient has been several times seen; he continues to drive carriages, and during four months the wound has not opened.

Operation.—The patient is laid horizontally. If the operation is to be performed on the inner saphena, the limb is laid on the outside, the leg being bent a little on the thigh. The surgeon places himself on the outside of the limb. An assistant, placed on the same side, compresses the vein to make it more apparent, if it is not sufficiently seen under the integuments. To perform this compression, he grasps, in his hand, the inner part of the thigh, or

the corresponding part of the knee. With a convex bistoury, the operator makes a longitudinal incision over the track of the vein, through the skin and subcutaneous cellular tissue. The vessel being found and denuded, is seized by means of a canulated sound. Then the surgeon divides the vein by slipping the points of the scissors under each of the angles of the incision More or less blood is permitted to escape, according to the strength of the patient, with the intention of producing a copious bleeding. Sometimes blood passes from both ends; at other times only from the upper. The flowing of the blood is stopt by a slight compression on the outside of the wound, at two or three inches above and below the angle of the incision. If the compression were made on the wound itself, inflammation might take place from irritation. If no blood passes, which sometimes happens, the patient is bled at the arm. Union, by the first intention, is attempted, and it usually succeeds. The compression is removed two or three hours after it has been made, lest irritation and consequent inflammation should take place.

With regard to the ulcer, a compress, covered with cerate, is placed upon it, with dry lint, and a roller is placed above all. The antiphlogistic regimen is rigidly enforced, if the state of the patient will permit, and emollient drinks are given in abundance. In thirty hours after the operation, the ulcer has changed its appearance. Instead of being red or violet, as before, it has become pale; the purulent secretion diminishes, and the pus is yellow and good. The wound soon becomes cicatrized.

The cicatrization takes place in five, eight days, and a fortnight; but the usual time is from twenty-five to thirty days. The ulcer is almost always cured before the wound made for laying bare the saphena. Towards the termination, the dressings may be made with the chloruret of lime, in order to hasten on the cicatrix; but injury might arise from a too hasty suppression of the suppuration. During the treatment, the bowels ought to be carefully attended to, in order to prevent any inconvenience, by appropriate remedies.

The cicatrix obtained is of a very good kind. The veins are obliterated, the skin loses its violet colour, and it generally becomes moveable. The indurations and callosities may diminish, in proportion as the cicatrization advances. The limb soon resumes its former state, except a little emaciation.

Inflammation may take place: a tense pain, increasing on pressure, takes place along the vein, commencing at the two ends where the operation was performed. The adjoining cellular tissue swells and inflames; sometimes the whole limb participates in the inflammatory state. The skin covering the saphena is coloured and shining, along the track of the vessel, so that it represents a red line, such as would arise from the stroke of a whip applied to the limb. The other subcutaneous veins are sometimes also like a red network: but the saphena soon forms under the skin a knotty cord, rolling under the finger. The pain that arises from pressure is almost always felt in the direction of the heart. It is then evident that, in the greater number of cases, the inflammation tends to proceed in this direction. Limited at first to the local phenomena, it soon excites the morbid sympathies of the alimentary canal, the heart, and the brain.

M. Lisfranc applies over the track of the vein a great number of leeches above the superior angle of the wound, and, therefore, between the latter and the heart; on the contrary, he leaves to itself the inflammation occupying the portion of the saphena below the incision; by that means he obtains a kind of revulsion, which is proper to counterbalance the inflammation of the upper portion. After the leeches are taken off, emollient cataplasms, moistened with laudanum, are applied. Since this practitioner has applied the leeches only between the focus of inflammation and the heart, he has lost no patient from the former.*

To present a proof of the success of M. Lisfranc, by the employment of chloruret of lime, and the double section of the veins, in the treatment of ul-

* We have before us a great number of cases, proving the success of M. Lisfranc against ulcers, both by the chloruret of lime or soda, or the double section of the vein. The limits of this Journal do not permit us to report them.—*Note by the Editor.*

cers, we have to state that, before the month of October last, the Hospital of La Pitié contained usually from fifty to sixty individuals affected with this disease, and since that time there are but very few, the stay of which is always extremely limited.

ANATOMY.

Vegetable and Animal Substances found at Thebes and Memphis, and forming part of the Cabinet of Egyptian Antiquities of M. Passalacqua. By M. Julia Fontenelle. (Revue Medicale, September 1826.)

Although it is impossible to assign the exact period of the destruction of Thebes, we may nevertheless suppose that event to have taken place more than 3000 years since. The Thebans had given the name of *Necropolis*, or City of the Dead, to the place where they deposited the dead bodies, or rather the mummies: it consisted of a number of grottoes excavated round a pretty extensive hill.

A great number of antiquarians have explored the ruins of Herculaneum and Pompeii, and the precious objects which they have collected adorn the museums of Naples and Portici. Others, again, have travelled over those beautiful countries that were the cradle of the arts and sciences. In our days, M. Passalacqua, guided solely by the desire of information, and the love of antiquity, has spent several years of his life in making excavations in some of the cities of Egypt, and particularly at Thebes and Memphis. The collection of the different objects that he found there and brought into France, is the most beautiful and interesting hitherto seen.

Among these objects there are some which were intended for adoration, for agriculture, domestick use, embalming, sculpture, &c. There are also to be seen amongst them manuscripts on papyrus, garments, tombs, vases, surgical and musical instruments, marbles, statues, money, jewels, colours, &c. The vases before mentioned are of various forms and sizes; they are formed of oriental alabaster, serpentine, spar, puddingstone, earthenware burnt, enamelled, &c. Sixteen of these vases were intended, at the time of embalming, to receive the intestines, liver, and other viscera: these vases are known under the name of *Canopes*. The largest and handsomest contains a soft pitchy substance, of a brown colour, of a sharp odour and taste, of which I shall speak again. In the most of the other vases are bitumino-resinous preparations, intended for embalming.

Among the objects that attract the attention of the curious, is a travelling medicine chest, which was found at Thebes; it consists of,

1. A square box, surmounted with a curved lid, with cut ends. On each side of the box is painted a jackall, lying in the centre of a framework of hieroglyphics, amongst which a royal cartouche is remarkable. The upper part of this lid is decorated with three bands of hieroglyphics, in which is also a cartouche. The height of this box is 2 feet 1 inch, and its breadth 1 foot 4 inches 6 lines.

2. Another box of 1 foot 2 inches high, by 6 inches 6 lines broad, which is contained in the preceding, and incloses that which follows.

3. A third box, with four feet, worked with straw, and ornamented with a wooden button. Upon its lid is a button incrusted with ivory, for the purpose of lifting it. This box contains six vases, five of which are of oriental alabaster, and the sixth of lava. These vases, of which the forms are very fine, contain different medicinal substances, which have not yet been analyzed. There is also a wooden spoon, the handle of which is adorned with a head of *hator*, and twenty-five different roots, which we intend to examine.

Animal Substances.—The collection of animal substances is composed of a great number of human mummies, Greek and Egyptian, of men, women, and children, of different ranks. These mummies have been prepared in several modes: 1. In removing the viscera, and, after the cavities have

been carefully cleaned with palm wine, filling them with resinous and aromatick substances, &c.: 2. By injecting asphaltum, liquid resin of cedar, into the abdomen, without opening it, and into the cavities, and leaving the body, during seventy days, covered with a solution of natron, and afterwards permitting the resin to escape, which carries with it the dissolved intestines, &c.: 3. By macerating the dead bodies, during seventy days, in an alkaline solution. (This was the manner of embalming the poor.) These different mummies were covered with bands of linen, &c. In this collection is seen the mummy of an old man, in which the hair is preserved; beside it is that of a child, of a year old, whose head is adorned with fair hair; below is the arm of a woman, the epidermis of which is in good preservation, and the hand very pretty: it was embalmed by the second mode. Finally, there is one of these mummies upon which there are hieroglyphicks, and the name of, *hator*, in Greek; and another of which the eyes are of enamel. Beside this one are tresses of hair well preserved.

Besides these human mummies, there are others of many animals, prepared nearly in the same manner. They are of rams, cats, dogs, the ibis, apes, small crocodiles, fishes, vultures, hawks, owls, rats, serpents, frogs, toads, birds, insects, &c. There is also to be seen an egg of the ibis, which was found in a tomb; hitherto the most ancient were those found at Pompeii.

Vegetable Substances.—Since the time that we examined these vegetable substances, M. Kunth, corresponding member of the Royal Academy of Sciences, has made them the object of his researches. He has ascertained that the fruits and fragments of plants, discovered by M. Passalacqua in the tombs of ancient Egypt, belong nearly all to the vegetables existing at present in those countries. It seems, then, to be proved, that the vegetation of ancient and modern times is perfectly identical, and that during so many ages the plants have undergone no sensible change in their form and structure. We proceed to give an extract of the vegetables ascertained by M. Kunth and myself.

1. *Fruits.*—*Crucifera thebaica*, Delille, *Description of Egypt*, tom i.: it is the doum of the Arabians. *Phœnix dactylifera*, Linn.; dates. *Punica granatum*, Linn.; pomegranates: They are very dry, the skin is reddish and blackish. *Ficus sycamorus*, Linn. Lamarck; sycamore. *Ficus Pharaonis de camerarius. Ficus carica*, Linn.; ordinary fig.

Stones and Fruits.—*Balanites Egyptiaca*, Delille, Egypt, Linn. *Ximenia Ægyptiaca*, Vesling. *Myrobalanus chebulus*: the stones are very hard, and pierced with a hole above the centre. *Juniperus Phœnicea*, Linn.; juniper of Phenicia. *Citrus aurantium*, Linn. *varietas fructu amaro*; bitter orange. *Areca Passalacquae;* the seeds are marbled, hollowed in the centre; a species scarcely known. *Vitis vinifera*, Linn., *varietas monopyrena;* the chasselas raisin, in good preservation, very dry, blackish and acidulated. Other unknown fruits.

2. *Seeds.*—*Diospyros*, a kind of *placqueminier*. M. Kunth has not been able to ascertain if it was the *Diospyros lotus*, or the *Embryopteris glutinosa* of Roxburgh. *Cucurbita:* these seeds belong to a peculiar kind. *Ricinus communis*, Lin. *Palma Christi. Triticum vulgare*, Linn.; wheat. *Cyperus esculentus*, Linn.

3. *Branches and Leaves.*—*Ficus sycamorus;* sycamore. The wood of this tree was used for making the coffins of the mummies, and also for the construction of the tomb of the chief priest. *Olea Europæa*, Linn.; olive: the stalks and leaves are well preserved.

4. *Umbellated Stalks.*—*Cyperus papyrus*, Linn.; papyrus and byblos of the ancients. The height of these stalks is 6 feet; they are well preserved, as well as the umbellæ.

We do not think it necessary to carry this examination farther.

Chemical examination of some of these substances.

1. *Egyptian Wheat.*—This wheat presents, generally, a shining and reddish surface. Some grains are split longitudinally and swelled; their weight is from six to seven and a half grains. Being cut across, they present farina

of a yellow colour, whitish; which, examined with Euler's perfect microscope, is composed of shining micaceous papillæ, without trace of any animal, dead or living. This farina does not unite with water, but it deposits at the bottom of that fluid an amylaceous, yellowish substance, which, with boiling water, gives a kind of paste that is tinged of a beautiful blue, by tincture of iodine. The water swimming over this starch, strongly reddens paper tinged with turnsol. A grain of this wheat, treated by boiling alcohol, lost a part of its shining covering, and the menstruum became of a yellow tinge; distilled water rendered it a little milky. This experiment seems to prove that the wheat had been plunged into some resinous liquor, intended to preserve it, which may have also given that tinge to the farina. Another grain of this wheat, reduced to fine powder, introduced into a tube, closed at one end, and exposed to the heat of a spirit lamp, gave a reddish oil, some empyreumatic water, and the gases produced from it did not at all change the colour of paper tinged with turnsol.

These different trials tend to prove, 1*st*, That this Egyptian wheat is covered with a resinous substance, proper for its preservation; 2*d*, That, after more than 3000 years, its fecula is in good preservation; 3*d*, That there is no trace of gluten found in it, but, instead of it, an acid, of what kind we could not ascertain, on account of the small quantities on which we operated.

2. *Seeds of the Ricinus.* Ricinus communis, *Linn.*—Seeds very well preserved; colour a litle dull; weight from $1\frac{4}{5}$ to $2\frac{1}{5}$ grains. Cut transversely, they present a yellow paste, of a rancid taste and smell, which being thinly spread on a plate of glass, and seen by the microscope, shews small drops of transparent oil, scarcely coloured; boiling alcohol deprives it of the greater part of this oil, which is separated by water into small striæ. According to these facts, it is evident, that these seeds of ricinus have been well preserved, during so considerable a period of time, except that their oil has become rancid, and a little acid has been produced.

3. *Grape Seeds.*—Seeds pretty large, of a beautiful black, hard; fracture shining, taste acidulous, presenting crystalline points. Treated by boiling water, this liquid reddens turnsol, and gives no indication of sugar. Every thing induces us to believe that the supertartrate of potass has remained unchanged, and that these grape seeds owe their acidity to the tartaric acid.

4. *Ox Bones.*—These ox bones were found in the sepulchral chamber discovered by M. Passalacqua; they are pretty hard and compact, and of a yellow colour. Treated with muriatic acid, diluted with water, I extracted from them a little more than two-thirds of the gelatine, which an equal quantity of fresh bones would have produced; this gelatine is yellowish. These bones give traces of acidity and indications of animal matter. M. Darcet has also examined them; the result of his researches is the following:

1. That these bones contain as much gelatine as fresh bones. 2. That the animal black which they give is as good as that made of bones gathered in the street. 3. That the gelatine of these bones seems to have been a little changed by being so long kept, since only 0.20 is obtained by means of muriatic acid, whilst, by the same means, 0.27 can be extracted from fresh bones. 4. That the bones, such as were sent to him, could be employed for the preparation of gelatine nearly as well as new bones, &c.

5. *Balsams.*—M. Passalacqua had sent us samples of the balsams contained in the vases of his collection, but we have examined only the following.

This balsam is preserved in a very beautiful vase of serpentine; it is of a soft consistence, of a pungent taste and smell, a brown colour, half transparent, and covered with a brownish powder. Exposed to the action of heat in a glass retort, it gives no trace of benzoic acid, but a little brown oil, matter slightly ammoniacal, and gases containing hydrogen. Water has no action upon it; alcohol takes up an oily substance from it, which is something like naphtha; ether, oils, and that of petroleum, dissolve it almost entirely. This attempt at analysis inclines us to believe that the substance in question ought not to be considered as a balsam, seeing it gives no trace of benzoic acid, and that its properties come near to those of *asphaltum* or *bitumen* of Judea, which the Egyptians employed for embalming, by the name of *Mineral Mummy.* It may be objected, that this bitumen is brown and solid; but

it is certain, that that which is found on the surface of the Dead Sea is liquid or of a soft consistence, and that its colour varies from brown to grey, red, &c.

We intend to examine, in succession, the other substances to which the name of balsam has also been given.

ZOOLOGY.

Case of Carditis in the Cow, with Hydropericarditis, Pleurisy and Hydrothorax, occasioned by the presence of a Sewing Needle fixed in the Auricular Orifice of the Right Ventricle of the Heart. By M. Fr. Domdrieu, M. V. at Lewardac (Lot-et-Garonne.) (Journal de Médecine Vétérinaire, Oct. 1826.)

The disease which is the subject of this case is truly, I think, of that kind of which the diagnosis is difficult to establish, especially when the causes are entirely unknown. The cause which principally produced the death of the cow, which is the subject of the present case, would have always remained concealed, but for the examination of the dead body, through which I discovered its nature, and was enabled to appreciate the developement of the accidents to which this cause had given rise.

On the 15th July 1826, I was called to give assistance to a cow that was sick, from seven to eight years of age, of a middling size, pretty well formed, belonging to Madam Buette, a proprietress at Pompiey (Lot-et-Garonne). I found her lean, suckling a calf, which she had had for a month, and affected with a gastro-enteritis, with the following symptoms: pulse small, hard, and accelerated; the conjunctiva and mucous membrane of the nose more red than usual, mouth hot, tongue covered on the middle with a whitish crust, and red on the edges, temperature of body hotter than usual, the ears and horns alternately hot and cold; the animal moaned constantly, especially when lying, the belly sometimes swelled; not ruminating, nor passing dung, except rarely; the excrements were hard; urine red, and in small quantity.

Treatment.—Bleeding from three to four pounds, mucilaginous drinks and injections, water, whitened with rye meal, given at intervals.

The same circumstances having continued for three days, on the fourth they came to tell me that the cow was doing better, that she did not moan any more; that she had eat, dunged, and passed urine twice; that she was no longer swelled, and that she shewed a desire to eat. From that information I gave over the potions, and ordered food to be given, but in small quantity; also whitened water for drink, and still some injections.

On the 24th, I was called again, and found her worse, with different symptoms: pulse a little full and quick, respiration difficult, dilatation of the nostrils, the eye a little bright; the animal ate very little and slowly, a slight oedema presented itself at the dewlap, and under the breast, the jugular veins appeared large. I then applied my ear to the left side of the thorax, and heard a slight noise, which I thought was occasioned by a liquid effused into the cavity of the pleura, or even into that of the pericardium. From this moment I thought the animal seized with a dropsy of the chest, and considered her incurable. The owner, however, who was much concerned, wished that the treatment should continue; and I consequently prescribed diuretick potions, and ceased using injections.

On the morning of the 27th, I saw her again, and found her a little better. She had several times dunged, ruminated, and passed urine, in the morning; but the other symptoms had lost nothing of their intensity; the same means were continued till next day, the 28th. At this period, seeing her nearly in the same state, I added drastick purgatives, in order to increase the activity of the absorbents, and produce a favourable revulsion to the digestive canal. For this purpose, I prescribed aloes in the dose of three ounces, and half an ounce of jalap. 29th, The same state and the same treat-

ment. 30th, No alleviation, but the animal suffered much; respiration more difficult; pulse weak, small and quick; skin dry and adhering to the sides; hair standing on end and dull; the anterior limbs separated a little from the breast; the edema had enlarged. I advised that nothing more should be done, on account of the always increasing weakness of the principal organs of life. The whitened water alone was continued. The 1st of August I saw her in the morning, when she could scarcely stand on her legs; the pulse was weak, soft, depressed and quick; the jugulars, from the upper part to their entrance into the chest, had become extremely enlarged; the breast rounded, and extended by the great quantity of liquid it contained: the limbs much more separated, respiration painful; the ear being applied to the chest, I heard a noise like that of a roaring at a distance, which prevented me from observing the contractions of the heart, except indistinctly.

I told the owner that, probably, her cow would not live all night, and requested her to let me know how matters stood in the morning. They came, indeed, and told me that she was dead. I went, and proceeded to the examination, in presence of M. Berreté *junior*, Langareil, the owner, and others.

Examination of the Body.—The skin being removed, and the animal placed on the right side, I punctured the chest, from which flowed from six to seven pints of a yellow limpid serous matter. The three first ribs being removed, I perceived the pleura of the lungs adherent to the pleura costalis of the same side, which seemed but of recent date. The sacks of the pleura contained also some false membranes, swimming in the remaining liquid, which was more purulent, and of the consistence of cream. The pericardium, increased in thickness, adhered closely to all the base of the heart, which adherence continued as far as the middle part of it; the rest of its cavity was filled with a yellow serous liquid. The heart was hypertrophised; the left ventricle contained a great quantity of black coagulated blood, which continued into the aorta; the remaining part of the ventricles was sound. The right ventricle contained only a small quantity of black blood, also coagulated; its whole internal surface was of a slate colour, especially at the auricular orifice; in addition, *a preternatural tumour, of a fungous character, was developed upon its external parietes. It was transfixed by a sewing needle, of about eighteen lines in length, passing from behind forwards, towards the apex of the heart, with its two extremities free.* The left lobe of the left auricle at the top, presented some blackish spots, spread round the adherent parts, and a slight hepatization existed in this part, of a violet colour; the right lobe presented also a hepatization of a deep violet colour towards its point. The mesentery, entirely void of yellow fat, was flabby and livid; its chyliferous vessels almost empty; the small intestine a little inflamed over its mucous membrane. Of the four stomachs, the omasum only, and the obomasum, appeared to be slightly inflamed.

With regard to the other organs contained in the abdomen, they presented nothing remarkable.

CHEMISTRY.

Academical Examinations on the Principles of Chemistry, being an Introduction to the Study of that Science. By Dr Boswell Reid, 2 vols. 8vo. Pp. 474–580. Edinburgh. Black. 1827.

There are few questions of more importance to the improvement of general education, than that which considers the relative efficacy of the traductory and interrogatory forms of teaching the sciences. In the former, the teacher has the advantage of a natural position; he is supposed to be instructing the ignorant, and he is consequently at full liberty to employ every illustration and amplification which may seem subservient to that purpose. He has therefore the inestimable advantage of being always clear and intel-

ligible, and, where saving time is no part of his object, may hope for considerable progress in its accomplishment. Still he has no check upon the attention of his hearers, and yet the ultimate success wherewith his efforts should be crowned, depend almost entirely on this attention. As most men sit every Sunday of their lives in church, without becoming theologians, so many students pass years under the chairs of intelligent and industrious lecturers, with scarcely any benefit.

On the other hand, the system of teaching by interrogation, sets the teacher into an unnatural position. He has to frame and put questions, as if he were the learner, and the learner were the teacher; and the condensative nature of interrogation, in all languages, requiring that the speech in which it is conveyed should be highly elliptical, the language of the teacher becomes often indistinct or captious, whilst the whole burden of clearness, perspicuity, illustration, or amplification, is thrown upon the student. This is an obvious disadvantage. But, in compensation for this, the interrogatory method is sure to command attention; the student is obliged to prepare himself for the occasion, and he has, or ought to have, at that time, an opportunity of dissipating all the difficulties he may have encountered while preparing, by the specifick *viva voce* instructions of his teacher. The quality, also, of these instructions can be modified at the instant, and accommodated to the degree of instruction he finds already matured in his catechumen; in short, the advantages of this method are so vast, in cases of *single instruction*, that no rational person, if wishing to become thoroughly and rapidly informed on a specific subject, would hesitate for a moment which of the two methods would best accomplish his object.

The case, however, may vary extremely, when the economy or advantage of large assemblies of students are concerned: but it becomes a curious application of the general question, to consider how far the method of *writing the sciences by question and answer*, is convenient or useful.

For our parts, we feel inclined to answer this inquiry distinctly in the negative. There is little or no spur given by it to the attention of the individual, and the additional distinctness of propositions obtained by announcing them, in the form of questions, is far more than compensated for, and compensated the wrong way, by a perpetual interruption of the sense. We disapprove of the system altogether, and though introduced a century ago by the commendation of Locke, we might challenge any one to point out a standard, or even a tolerable work, so written, except mere school-books.

Notwithstanding the disadvantage of his method, however, Dr Reid has presented us with an able work. He has embraced, in his two little volumes, almost every thing worth notice in the science of which he treats, and in a manner so full and so distinct, that the reader is at a loss to conceive how he contrived to find room for them all. The newer facts of chemistry, hitherto scattered over the scientific journals, he has gathered with an industry that ought to put to shame many of his older and more favoured competitors; and, with merely one stroke of the charcoal over a rather affected *neoterism*, in the preparation of some of the numerous bodies he considers, we dismiss him with the high praise which he merits, and with the sincere recommendation to the perusal of students, which he is sure to honour. We cannot be expected to analyze a work of mere elements. Dr Reid has also published a very much improved scale of chemical equivalents, of which hydrogen is made the unit.

Elements of Chemistry, including the recent discoveries and doctrines of the Science. By Edward Turner, M. D. F. R. S. E., Fellow of the Royal College of Physicians, and Lecturer on Chemistry, Edinburgh; Corresponding Member of the Royal Society of Göttingen, and Member, and formerly President, of the Royal Medical Society of Edinburgh. 8vo, pp. 723, W. Tait. Edinburgh, 1827.

A Manual of Chemistry, like an almanack, requires to be renewed annually. If not thus renovated, in the shape of an edition accommodated to the time, it is sure to be supplanted in publick favour by one bearing a more re-

cent date. The fame of a discovery, almost as soon as it is made, goes forth in the publick journals; but it is there coupled with hard names and minute details, which render it next to impossible for the general readers of these periodicals to embrace the whole fact distinctly in their cursory glance. That Thenard had combined oxygen with water, and that Dobereiner had inflamed hydrogen with platinum, were facts recorded almost as soon as known,—but such things are *known* to mankind long before they are understood; and, in order fully to comprehend them, we recur to the systematick work, in preference to the original memoir, as being a place where the facts and reasoning are found modified by the judgment of one whose authority we respect.

For such reasons, we place a high value on productions like the present, and the preceding able publication of Dr Reid. They enable us at a glance to perceive what is trustworthy in the additions of which the professors of a particular science often vainly boast, and in none more frequently than in chemistry. Dr Turner's "Elements" promise to be particularly estimable, from his known personal devotion to that science, and the spirit of investigation and well regulated curiosity which he carries into his researches.

"This treatise," he assures us, "is not to be viewed in the light of a mere compilation.—In the purely practical parts of the work, for example, in *describing processes*, in giving the *tests* for demonstrating the presence of substances, and in explaining the *rules for conducting chemical analysis*, I have in general merely stated in writing what I am in the habit of practising in the laboratory. It is likewise proper to mention, that, in detailing the experimental results obtained by other chemists, I have in many instances *verified* them by my own observation; and, when treating of the obscure or disputed parts of the science, I have taken pains to render the former clear, and to distinguish in the latter what is *ascertained* from what is still *undetermined*."—Pref. p. vi.

In going over Dr Turner's work, we must do him the justice to say, that the above is a very candid, modest view of what he may fairly lay claim to, and if he had added, "that, in many theoretical parts, mystified by the affected language of previous writers, and in many parts relating to medicine, obscured or disgraced by their ignorance, he has been distinct, precise, and sensible;"—we should have added our feeble support to the assertion. Amongst so many able competitors for public favour, it would be as rash as unjust to maintain that Dr Turner has excelled them all: but his book offers very few faults, and is a convenient perspicuous compendium of the knowledge of the day, and presents more novelty than is commonly met with in works of the same description. We dislike his arrangement, as being about the worst possible; —*imponderable substances*,—*inorganick chemistry*,—first subdivided into thirteen heterogeneous sections, which it has defied even Dr Turner himself to class under any one appellation,—*compounds of the simple, non-metallick acidifiable combustibles*,—*metals*,—*salts*,—*organick chemistry*. The lucid arrangement of Dr Thomson and Davy is so consonant with reason, and our acquired ideas in chemistry, that new-fangled or absolutely irrational temptation to variety on that score, should be strongly resisted by the chemical neophyte in his first publication. We have heard it observed of these gentlemen, that they are by no means given to change, and that the first mode of division adopted by them, apparently *helter skelter*, as we say, is generally persisted in for life:

"Just as the twig is bent, the tree is inclined."

Still worse do we relish a sort of feeling tenderness for authorities, as some persons would wish themselves to be deemed. No mention is made of Dr Boswell Reid's sensible adaptation of the hydrogenous unit to a new and improved scale of equivalents, because, we suppose, Dr Wollaston, and Dr Thomson, and Mr John Dalton, have chosen to encumber themselves with a system involving them in fractional computations to three places of decimals, and which has exposed these learned chemists to laughter from one end of Europe to the other. They are the true metempsychosis of the Chinese peasants of Goldsmith, who raised a dangerous rebellion, when forbid to load their asses with a pannier on one side, and a stone on the other!

Our *Edinburgh* educated readers may perhaps recognize something of the

same character in the following extract, with which specimen, for the present, we shall conclude our notice of Dr Turner's very able publication.

"*On the Nature of Chlorine.*—The change of opinion which has gradually taken place among chemists concerning chlorine, is a remarkable fact in the history of the science. The hypothesis of Berthollet, unfounded as it is, prevailed at one time universally. It explained phenomena so satisfactorily, and in a manner so consistent with the received chemical doctrine, that for some years no one thought of calling its correctness into question. A singular reverse, however, has taken place. Though it has not hitherto been rigidly demonstrated to be erroneous, it has within a short period been generally abandoned, even by persons who, from having adopted it in early life, were prejudiced in its favour. The reason of this will readily appear on comparing the two theories, and examining the evidence in favour of each.

"I. Chlorine, according to the new theory, is maintained to be a simple body, because, like oxygen, hydrogen, and other analogous substances, it cannot be resolved into more simple parts. It does not indeed follow that a body is simple, because it has not hitherto been decomposed; but as chemists have no other mode of estimating the elementary nature of bodies, they must necessarily adopt this one, or have none at all. Muriatic acid, according to the same doctrine, is considered to be a compound of chlorine and hydrogen. For, when it is exposed to the agency of galvanism, it is resolved into these substances; and, by mixing the two gases in due proportion, and passing an electric spark through the mixture, muriatic acid gas is the product. Chemists have no other kind of proof of the composition of water, of potassa, or of any other compound.

"II. Very different is the evidence in support of the theory of Berthollet. According to that view, muriatic acid gas is composed of *absolute muriatic acid*, and water, or its elements; chlorine consists of *absolute muriatic acid*, and oxygen; and *absolute muriatic acid* is a compound of a certain unknown base and oxygen gas. Now, all these propositions are gratuitous. For, in the first place, muriatic acid gas has not been proved to contain water. Secondly, the assertion that chlorine contains oxygen, is opposed to direct experiment, the most powerful deoxidizing agents having been unable to deprive that gas of a particle of oxygen. Thirdly, the existence of such a substance as *absolute muriatic acid*, is wholly without proof; and, therefore, its supposed base is also imaginary.

"But this is not the only weak point in the theory. Lime chlorine is admitted, by this theory, to contain oxygen; it was necessary to explain how it happens that no oxygen can be separated from it. Thus, on exposing chlorine to a powerful galvanic battery, oxygen does not appear at the positive pole, as occurs when other oxidized bodies are subjected to its action; nor is carbonic acid or carbonic oxide evolved, when chlorine is conducted over ignited charcoal. To account for the oxygen not appearing under these circumstances, it was assumed that *absolute muriatic acid* is unable to exist in an uncombined state, and therefore, cannot be separated from one substance, excepting by uniting with another. This supposition was thought to be supported by the analogy of certain compounds, such as the nitric and oxalic acids, to the existence of which, unless combined with another body, water seems to be essential. It will be found, however, on close examination, that these instances are not applicable to the case of chlorine and muriatic acid. For, though the nitric and oxalic acids have not hitherto been obtained free from water, this obviously arises from the tendency of their elements to obey other affinities, and to arrange themselves in a new order.

"Admitting the various assumptions which have been stated, most of the phenomena receive as consistent an explanation by the old as by the new theory. Thus, when muriatic acid gas is resolved by galvanism into chlorine and hydrogen, it may be supposed that the *absolute muriatic acid* attaches itself to the oxygen of the water, and forms chlorine, while the hydrogen of the water is attracted to the opposite pole of the battery. When chlorine and hydrogen enter into combination, the oxygen of the former may be said to unite with the latter, and that muriatic acid gas is generated by the wa-

ter so formed combining with the *absolute muriatic acid* of the chlorine. The evolution of chlorine, which ensues on mixing muriatic acid and peroxide of manganese, is explained on the supposition that *absolute muriatic acid* unites directly with the oxygen of the oxide of manganese.

It will not be difficult, after these observations, to account for the preference shown to the new theory. In an exact science, such as chemistry, every step of which is required to be matter of demonstration, there is no room to hesitate between two modes of reasoning, one of which is hypothetical, and the other founded on experiment. Nor is there, in the present instance, temptation to deviate from the strict logic of the science, for there is not a single phenomenon which may not be fully explained on the new theory, in a manner quite consistent with the laws of chemical action in general. It was supposed, indeed, at one time, that the sudden decomposition of water, occasioned by the action of that liquid on the compounds of chlorine, with many simple substances, constitutes a real objection to the doctrine; but it will afterwards appear, that the acquisition of new facts has deprived this argument of all its force. While nothing, therefore, can be gained, much may be lost, by adopting the doctrine of Berthollet. If chlorine is regarded as a compound body, the same opinion, though in direct opposition to the result of observation, ought to be extended to iodine; and as other analogous substances may hereafter be discovered, in regard to which a similar hypothesis will apply, it is obvious that this view, if proper in one case, may legitimately be extended to others. One encroachment on the method of strict induction would consequently open the way to another, and thus the genius of the science would eventually be destroyed.

"An able attempt was made some years ago by Dr Murray, to demonstrate the presence of water, or of its elements, as a constituent part of muriatic acid gas, and thus to establish the old theory to the subversion of the new. Into this discussion, however, I shall not enter here, as it would lead into details too minute for an elementary treatise. I shall only observe, in referring to the original papers on the subject, that Dr Murray did not succeed in establishing his point; and that his arguments, though exceedingly plausible and ingenious, were fully answered by Sir Humphry and Dr John Davy. I must also state, that the history of the only experiment which strictly bears upon the question,—that, namely, in which muriatic acid and ammoniacal gases were mixed together,—amounts very nearly to a demonstration of the absence of combined water in muriatic acid gas. The quantity of water which did make its appearance during the experiment, was so very small, in comparison to what ought to have appeared on Dr Murray's supposition, as to leave little doubt in my mind that its origin was accidental." Pp. 254—257.

BOTANY.

[*In consequence of the delicate state of health of our learned coadjutor, Dr Greville, the Botanical communications have been deferred to our next.*]

Medical Botany, or Illustrations and Descriptions of the Medicinal Plants of the London, Edinburgh, and Dublin Pharmacopoeias, with those lately introduced into Medical Practice; comprising their Generic and Specific Characters, English, provincial, and foreign Appellations; a copious List of Synonymes, Botanical Descriptions, Natural History, Physical, Chemical, and Medical Properties and Uses: including also a Popular and Scientific Description of Poisonous Plants, particularly those that are indigenous to Great Britain and Ireland, with Figures coloured from Nature; the whole forming a complete System of Vegetable Toxocology and Materia Medica. By John Stephenson, M. D. Graduate of the University of Edinburgh, and James Morss Churchill, Esq. Surgeon, Fellow of the Medico-Botanical Society of London. No. I. 8vo. pp. 28. 4 plates. Churchill, London; Carfrae, Edinburgh. 1827.

We are too proud of our modern science, and too ignorant of that of the ancients, upon which it is raised. We mistake minute subdivision for correct

knowledge, variations for improvements. Were it not for the lessons which experience forces upon us, our vanity and egotism would go far to abjure every practice, and to relinquish every proposition of an older date than ourselves. Nay there are not wanting examples, where, like the Mulatto who fancied his dingy lineage improved, by declaring his Congo mother a Cherokee princess, the modern innovator would ingraft his perversions upon the original ideas of Greece and Rome, which, so far from being related, are only revolted and profaned by the imputed affinity. *Naturam expellas furcâ, tamen usque recurret;* the old order of things, and the ancient felicity of their application, are gradually returning; and we hail the symptoms of their appearance in the present work. The ancient works of Materia Medica, had figures of the plants they described, as we are informed by Pliny and other authors. This was particularly the case with the works of Dioscorides, the most popular of all the ancient writers upon this subject; and it is, perhaps, not generally known, that several of the copies, presenting these figures, are still extant. The excellent translation and commentary of Matthiolus, with 600 figures, forms the era of modern medical botany; and its enlargement and correction, by the great Caspar Bauhin, to 1200 plants, is still a very high authority in that science. In our own country, Woodville executed on copper what the others effected on wood; but the work is expensive, and already antiquated from the recent changes in the pharmacopoeias. The present lithographies are well executed, and, considering their colouring, afforded at a reasonable rate. The letter-press, given along with them, is *recherché* and sensible, so that the only thing to be reprehended, is the probable compass of the work. As the numbers, however, are to appear monthy, this objection will have less weight. The *Atropa belladonna*, the *Convolvulus sepium*, the *Lolium temulentum*, and the *Croton tiglium*, are the specimens given in the present number, and we consider their representations exquisite. The slight raggednesss of outline, objected to by the admirers of *taille douce*, is nothing; it is part of the rotundity of nature. So rare is it to meet with a just representation of the Croton tiglium, that we have copied the figure of Messrs Churchill and Morss, as taken from an unique drawing in possession of the London Society. The reader will see our copy in Plate III. which we think tolerably executed. In concluding, we wish every student of medicine to apply himself to the delineation of plants. He never can visit all the climates where they grow; and however content he may be, we do not envy his feelings, when he meets with those that have possessed themselves of the knowledge his idleness forbids him to acquire.

CORRESPONDENCE.

Letter on the Identity of the Causes of the different forms of Hepatitis, Intermittent Fever, Cholera, Diarrhoea, and Dysentery, occurring in India. Addressed to the Editor.

Madras, October 11. 1826.

My Dear Sir,—The few observations which I have the honour of sending to you for insertion in the Edinburgh Journal of Medical Science, I trust will not be found destitute of interest.

The diseases to be met with at Madras at present, are Hepatitis, Febris, Cholera, Dysenteria, Diarrhoea. I may also mention Ophthalmia and Rheumatismus.

Of all these, the cases of dysenteria are by far the most numerous; and next to it, acute hepatitis.

It is not necessary for me to enter into a long description of the history of each of these diseases, since they can be so easily found by any one who will take the trouble to look into Cullen, Sauvages, Vogel, Linnaeus, Sagar, Sydenham, Van Swieten, Morton, with a host of others. In my remarks,

I mean to refer to all these affections, endeavouring to show some connection between them.

The definitions, indeed, of cholera morbus, as given by these authors, but more particularly by Van Swieten in his Commentaries, is exactly correspondent to that found in the report of the Madras Medical Board, drawn up by William Scott, Esq. in 1824.

Of the authors whom I have mentioned, Cullen is the only one who relates symptoms which I have never seen here. These are contagious fevers, and a retention of the alvine feces in dysenteria. Perhaps, however, Cullen had never seen the pure form of dysentery, but had witnessed it combined with some practical phlegmonic inflammation of the primæ viæ, or with some low nervous fever. Dysentery here is always ushered in under the form of diarrhea, or a complete discharge of all the alvine matters; and in those who die of real dysentery, there are never found any feces in the alimentary tube.

I wish to make this letter as short as possible; and must, therefore, break abruptly off here, and direct my observations immediately and briefly to one point, viz.—the endeavouring to shew that the symptoms of all these diseases are essentially the same, only differing in degree, and that they can all be traced as arising from certain conditions in the states of the assistant chylopoetic viscera, more especially, if not altogether, in that of the liver.

In hepatitis, there can be no doubt but that the plethora, the fever, the obstipatio, &c. are owing to increased action in that organ, producing pain and abundance of healthy bile, without which last I imagine the inflammatory fever could not possibly manifest itself. But from minute observation, I am positive that the hepatitis obscura of Sauvages, is much more common here than any other form of increased hepatic action. I consider it the most important species of inflammatory *liver*, and that none of the diseases I have mentioned will supervene, unless this, or (at least) some other form of hepatic action, in condition more or less severe, has taken place. If the action of acute hepatic affection is subjected to powerful depressing remedial measures, it is very probable that remittent fever, or a severe form of intermittent fever, will develope itself, and a violent diarrhea will, in all probability, ensue, whose exacerbations will have an intimate relation to the type of fever; and if the quality and quantity of the humours in the body are so altered and reduced by the extreme purging, that reaction cannot establish itself, then death will follow; and that, too, in a manner remarkably similar to the fatal issue of cholera. In most descriptions of cholera, it is stated that languor, vomiting, and diarrhea are the first symptoms; but others, perhaps, who had seen the disease earlier, mention a quick pulse and hot skin. I have, indeed, never read a case of cholera, in which a particular account of the patient's state of constitution is given two or three days previous to the accession of vomiting, purging, collapse, and spasm. I have no doubt but that if, in cholera, patients were interrogated minutely as to their previous sensations, by any one conversant in the symptomatology of hepatic action, he would be convinced that the organ in question was primarily affected.

The longer the coldness of the body continues in any fever, the greater is the danger; and in that disease known here under the names of cholera morbus, cholera spasmodica, cholera asphyxia, &c., the same relation of circumstances obtain; and the universal endeavour in its cure is to produce reaction of the arterial system, which never takes place as long as there is diarrhea; but if any bile appear in the dejection, then the alvine matters will be concocted and retained, and the purging will instantly cease. The bile, together with other fluids, will be absorbed from the primæ viæ, and then, but not till then, we will have a stage of fever, or one diametrically opposite to that of a cold one, whose activity will be in proportion to the quality and quantity of the fluid taken into the circulation.

The whole body, as well as any of its parts, feel naturally much depressed, after having been, for some time, in a state of increased action; and these two conditions existing at different times in the liver, appear to me to constitute the diseases under consideration.

In hepatitis and continued fever, "regular increased hepatic action" is manifested.

In intermittent fever, the condition of the liver oscillates between the states of increased and diminished action.

In remittent fever, its action is still farther irregular.

In cholera (or what I call congestive hepatic fever), there are many grounds for believing that the complete stagnation of healthy hepatic action is the real, I may say the sole, or proximate cause of those symptoms constituting this dreadful scourge.

The same relation of cause and effect obtains in dysenteria and diarrhea. But I need not mention such, since they must merely be considered as additional symptoms of those diseases above mentioned. For I notice diarrhea to be the connecting link in the chain of these symptoms, and I never saw these diseases of excited liver overcome, unless diarrhea supervened in a degree more or less severe; neither did I ever see a case of dysenteria or cholera but what was ushered in with diarrhea. Some instances of cholera occur without diarrhea, but then, in such cases, the contents of the primæ viæ were all discharged upwards;—such cases are rare.

Here, then, we have three forms of disease; one in which there is obstipation and extreme incitement; another, in which there is diarrhea and extreme depression; and an intermediate one, partaking of both these characters.

I doubt, if I enlarge further, that a single letter will not contain my observations, and, therefore, I shall close them by adding a classification of these diseases, which I think will illustrate, in the shortest space, what I have already endeavoured, in these hasty and condensed remarks, to point out. I must apologize to the authors of many recent excellent works connected with the same subject, for not referring to their opinions, but it is the narrow limits of my letter which alone prevent me from doing so at present.

- Hepatitis.
  - Hepatis Regularis.
    - Hepatitis Obscura. *
    - Acuta.
    - Continua.
  - Hepatis Irregularis.
    - Febris Hepato-Intermittens.
    - Remittens.
    - Congestiva.
- Symptomaticæ.
  - Diarrhœa Hepato-Acuta, vel Dysenteria.
  - Diarrhœa Hepato-Chronica, vel Dysenteria Mitis.

I trust I shall soon be able to transmit to you some enlarged observations on these diseases; whilst I shall endeavour to consider the different opinions of authors on the same subject, now prevalent. In the mean time, allow me to subscribe myself, yours truly, MEDICUS.

OBITUARY.

MR R. ALLAN.—IT is our melancholy duty to add to the list of those who have departed this life, in the full enjoyment of a well earned professional reputation, Mr Robert Allan, late Senior Operating Surgeon to the Royal Infirmary.

Mr Allan was born in Edinburgh in the year 1778, and after going through the proper preliminary branches of education, was bound an apprentice to the late Mr John Bell, surgeon, under whose auspices he enjoyed the advantages of a liberal and scientifick chirurgical education.

Having finished his apprenticeship, he entered the Navy as Assistant Surgeon, at the age of nineteen, and was on board the Nassau frigate, when it was wrecked off the coast of Holland. In 1799, when only twenty-one years of age, he was appointed full surgeon to a line of battle ship.

* Cullen. Sauvages.

Eight years hard service at sea, spent in the acquisition of practical knowledge, qualified Mr Allan for the equally responsible, though less arduous, situation of private practitioner; and as his health began to break, from the severe trials to which his naturally delicate constitution had been exposed, he returned to his native city, and entered into partnership with his former preceptor Mr J. Bell.

Three years afterwards he joined the Royal College of Surgeons, London, and published a Treatise on Lithotomy, a work which is now well known to the profession. On the following year, he became a fellow of the Royal College of Surgeons, of Edinburgh.

About this period an opening having presented itself, he conceived the idea of delivering a course of Lectures on the Principles and Practice of Surgery, a duty which, from his previous laborious habits, he was well qualified to undertake.

In the autumn of 1812, he commenced his first course of lessons, and was well encouraged to proceed, by the gratifying manner in which the pupils attended to his discourses. His reputation as lecturer increased annually, and each succeeding season brought additional students to his class room.

Pleased with his own well merited success, he determined to extend the sphere of his usefulness; and accordingly published, in the year 1819, the first volume of a System of Surgery. This work was completed in three volumes, a few days before his death.

For some years before his decease, Mr Allan held the situation of Surgeon to the Royal Infirmary, and, during the years 1825 and 1826, delivered, in conjunction with Mr Russell, Lectures on Clinical Surgery. These lectures were particularly valuable to the student, as they enabled him to judge of the propriety of the practice going on in the Hospital, and to reason on subjects connected with his profession.

Mr Allan was member of the Royal Society of Edinburgh, of the Society of Emulation of Paris, and of various other learned institutions.

Notwithstanding the delicate state of his health, the friendly zeal with which he exerted himself, to furnish his distinguished contributions to the early numbers of this Journal, will long be remembered with gratitude.

By all his professional brethren he was respected, and by many of them beloved, but, like most men of eminence, he did not altogether escape the envenomed shaft of envy. He rests now in the tomb, and it is neither our duty nor inclination to disturb his ashes, by alluding to professional discussions, which, when conducted with acrimony, always tend to injure a noble and valuable art. We shall merely add in conclusion, that a milder and more truly inoffensive man than Mr Allan never dignified our art; he was ever ready and willing to assist the younger members of the profession with his advice, and although steady to his purpose when in the right, he was at all times open to conviction, and eager to adopt those views which he deemed to be founded on just and legitimate induction.

Dr Good. (*From the Lancet.*)—"During the past year, the medical public has lost some of its brightest ornaments. Barclay, Vacca Berlinghieri, Scarpa, and Laennec; and we have now to add to the sad catalogue of mortality, the names of Mason Good, and Cline. Though long and deservedly known to the literary world, Dr Mason Good, until the publication of his Nosology, about ten years ago, was hardly known to physicians, and his medical reputation was not built up by degrees, but seemed rather to start into mature existence at once. The "Study of Medicine," the most comprehensive work of the kind that ever appeared in our language, whether we regard it as a work of labour or of genius, will glide down the current of time, and perpetuate his memory. Upon this work, we apprehend, his reputation must ultimately rest; for while his other labours, principally translations, may be looked upon as exercises, this could only be accomplished by much perseverance, industry, fatigue, and toil. He trod, perhaps, a little in the footsteps of Le Clerc and Freind, and mingling with the learned of past ages, was not always mindful of his contemporaries. But this was a venial fault, since he need not revive what has never been for-

gotten, or swell the volumes of his work with what was trite and common. Though Dr Good was a graduate of an English University, and aided the composition of the celebrated Oration of Sir Henry Halford, he was placed among the *permissi* of the College, having been at one period of his life a general practitioner. Dr Good's literary labours induced frequent attacks of gout, and, ultimately, his death, of a nephritic complaint, on the 2d of January 1827, in the 63d year of his age. We have heard that his posthumous works will be edited by Dr Olinthus Gregory, of Woolwich, who was associated with him in the compilation of a work called *Pantalogia.*"

Mr Bampfield.—Died at Reading, on the 1st instant, aged about 48, Robert W. Bampfield, Esq. He had been on the half-pay List of the Navy since the general peace of 1815; was surgeon of the Royal Metropolitan Infirmary for the Diseases of Children; and surgeon to the parish of Covent Garden. Mr Bampfield was born in Somersetshire, and was originally intended for the church—the profession of his father. From what motive, however, this line of study was abandoned, is not known to the writer.

He studied medicine at the London Hospital, and, after the completion of these studies, he entered into the naval service; when his great zeal in his profession, his general deportment, and superior attainments, soon raised him to the rank of full surgeon. He served as surgeon of the Balliquix and Warrior ships of the line, during a period of nine years, or upwards, in the East and West Indies; and, at the general peace in 1815, or beginning of 1816, he settled in Bedford Street, Covent Garden, as a general practitioner, and was in excellent practice.

Mr Bampfield first distinguished himself as a close observer in his profession, by an interesting and learned essay on Nyctalopia, usually called Hemeralopia, published in one of the early volumes of the Medico-Chirurgical Transactions of London. He next published, in a distinct treatise, a highly valuable work on "Tropical and Scorbutic Dysentery," which has gone through two editions: and his last publication was a voluminous essay "On Diseases of the Spine," which obtained for him the prize of the Fothergillian medal, from the Medical Society of London.

In the navy—in the parish where he resided—in the charitable institutions to which he lent his valuable services, and by his patients—he was universally esteemed and respected, for his talents, benevolence, and *great integrity of heart:* but in the wide circle of his private friends, and in his *family*, his loss will be irreparable. As a husband, a father, and a friend, he has left a bright example of excellence.

NOTICES TO CORRESPONDENTS, &c.

Dr Kinglake's suggestions will in future be attended to.

We have compared the passages in the case of vicarious menstruation, at page 273 of our 4th Number, by Dr Barnes, and find he has reason to complain of several misreadings on the part of the editor of the Medico-Chirurgical Review in his 10th Number. They are certainly calculated to lead careless leaders into an unfavourable opinion of the communication of Dr Barnes; and as we can see no ground for supposing them intentional, so neither can there exist any reason against our setting them right in this place.

At page 248 bottom, the reviewer "cannot help remarking on the somewhat confused statements which Dr Barnes has made. Thus, at p. 274, we are informed, that, between the years 1817 and 1820, the intervals between the attacks of hemoptysis varied from seven to ten weeks; and in the very next page but one, apparently under the date of 1820, Dr Barnes informs us, that the lady had no attacks of hemorrhage for six years. We suppose he means *from* the date of his communication at the end, but he ought to have been more perspicuous." The above is an admirable stultification of the art critical! "The passages quoted convey three facts,—1. That the fits of hemoptysis, at intervals of six, eight, or ten weeks, continued from 1817 to 1820: 2. That they ceased so to return after 1820: 3. That the patient had ceased to suffer them for six years, namely, from July 1820, when the report closes, to the date of Dr Barnes's communication, July 1826. We defy

any rational man to read the case, or even the abstract of it, without perceiving these three facts to be in them.

Again the reviewer conjures up another shadow at p. 249; and, on its unsolid foundation, charges Dr Barnes with "inconsistency, if not a complete contradiction." This strong language originates in his having understood Dr Barnes to say, p. 278, that the *first attack of hemoptysis* in his patient, was vicarious of suppressed menstruation. Dr BARNES, in the very paragraph alluded to, says expressly,—

"There can be no doubt, I think, that the blood evacuated by the mouth proceeded from the lungs, and was vicarious of menstruation. It came on *after* the menses had been suppressed, and returned at stated periods. THE HEMOPTYSIS WHICH OCCURRED TWO YEARS BEFORE, WAS PROBABLY THE PREDISPOSING CAUSE OF ITS TAKING PLACE FROM THE LUNGS." P. 278.

What language is intelligible, if the above present obscurity? What expressions safe, if the above afford a legitimate subject of reprehension? Nay, what distortion unpermitted, if the reviewer's representation of Dr Barnes's sentiments is held fair and legitimate.

REVIEWER.—"The otorrhœa must have continued for several weeks, but when it ceased we are not informed." P. 249.

Dr BARNES.—"She continued subject to severe paroxysms of pain in her head for many weeks, and they were generally accompanied with a discharge from the ear." Since then, (*i. e.*, since June 11. 1820), she has sometimes had very bad *headaches*, but never the excruciating pain she suffered in a paroxysm, nor has there been any watery discharge from the ear." P. 277.

We hope the learned editor will do Dr Barnes the justice to correct these readings in his next number. For ourselves we care not, we know he means us well, and has kindly named us "his esteemed contemporary of the North," in the very paper which gave rise to the present remarks; but we should certainly believe that we dreamed over our vocation as editors, if we had suffered the paper of our learned and highly respectable correspondent to go to press with the faults here imputed to it, without apprizing him of their nature.

The hints and queries we have received as to a continuation of our review of the phrenological combatants, must, like all human affairs, yield to the "invincible talons of necessity," and await their due fulfilment in the seventh Number.

The scheme proposed by Dr C. for the extinction of syphilis seems quite rational; and shall have due place and consideration in an early Number. If women are found so useful and trustworthy as midwives and sick nurses, we see no reason why they might not, under a watchful police, be rendered equally efficient as inspectors of the diseased of their own sex; and the price of their labour is so cheap, at the only age that would suit his arrangement, that we doubt not a vast saving to society of expences in hospitals, of misery, and of life itself, might be realized by attending to his proposal.

The review of Hutchison's surgical observations, one of the most important works of its class since that of Sharp, was too voluminous for the present Number. It will, however, appear in our next; and the editors will, in the mean while, if permitted, avail themselves of the able criticism of the same work, published in a late number of the excellent Hamburgh "*Magazin der Gesammten Heilkunde.*"

REFERENCES TO PLATES.

PLATE III.

a. Delineation of the Croton Tiglium L. *Monœc. Monandr.*, ord. nat. *Tricoccæ.*—*b.* the flower.—*c.* the seed and trilocular capsule.

PLATE IV.

a. Mr Wallace's Port-Aiguille, ready for use.—*b.* the Scarificator used by Baron Larrey.—*c.* the Moxa Forceps.—*d.* a Blowpipe for it.—*e.* Local Evaporating Instrument with Camp.—*f. g.* Mr La Beaume's Revolving Galvanic Battery.

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MANCHESTER
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R.M.cInnis del.

W. Miller

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Masson del.

W.H.Miller Sc.

a a Parietal Bones

b b b granulations

Published by Maclachlan & Stewart 1827

PLATE III.

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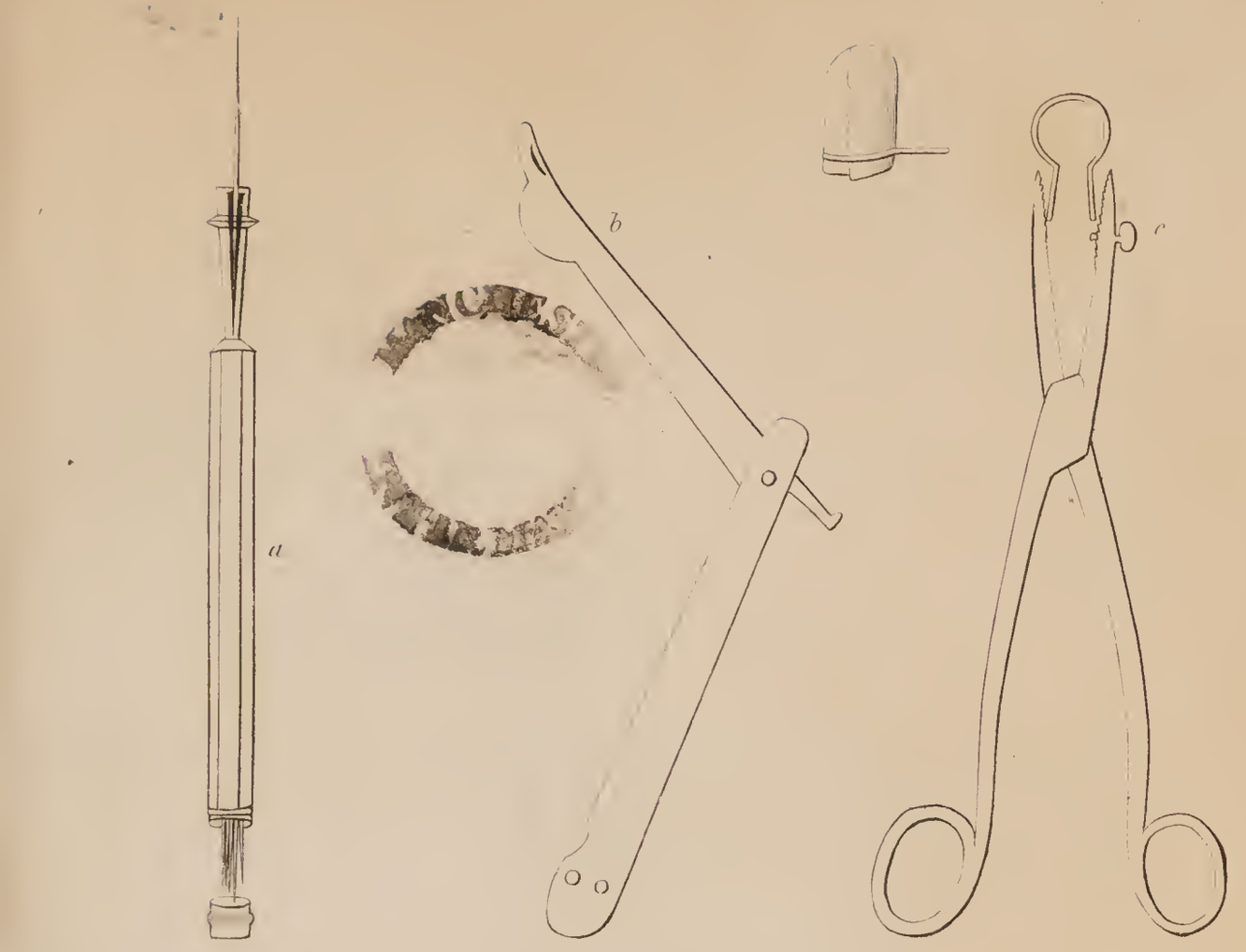

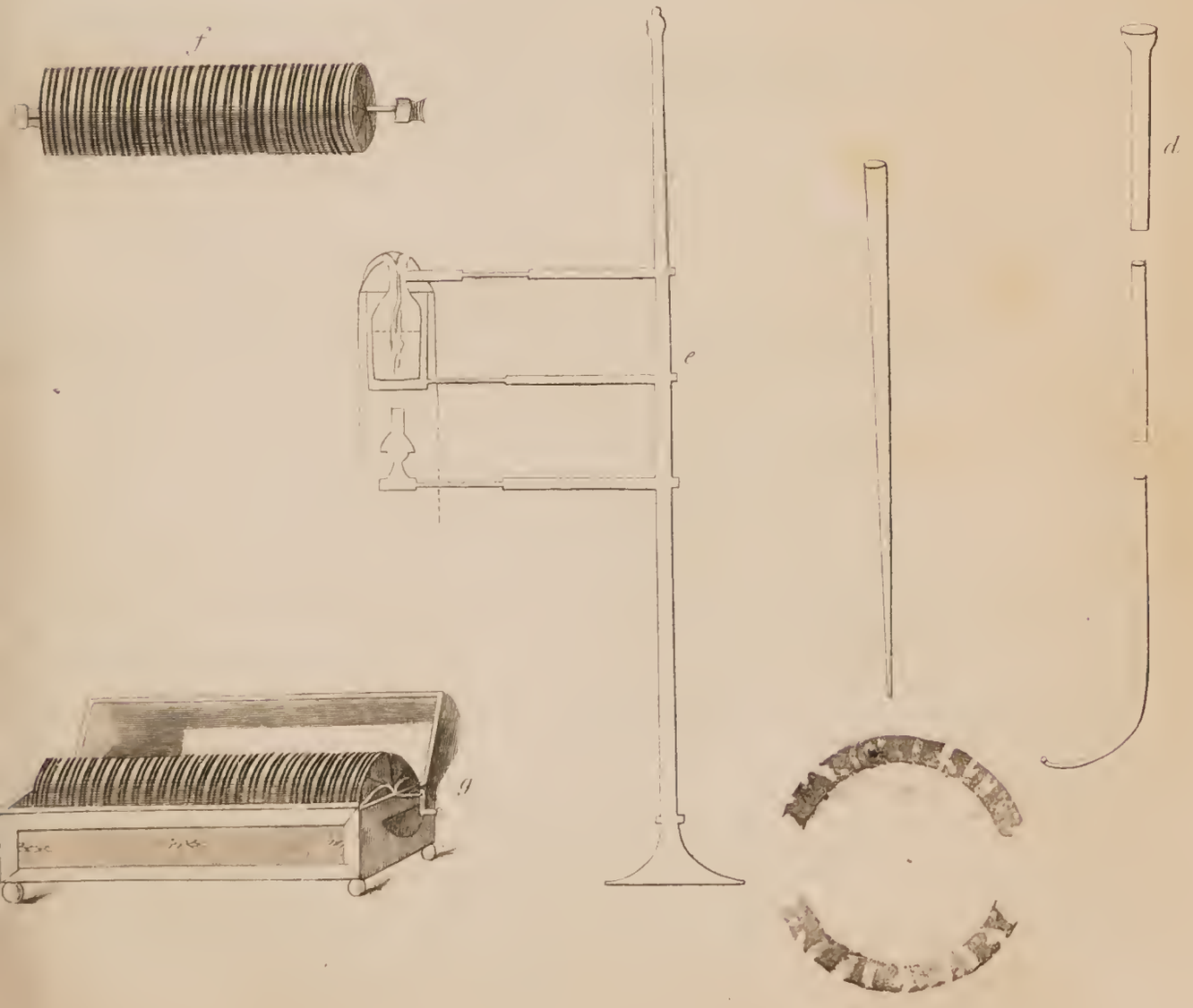

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